

IN THE UNITED STATES DISTRICT COURT  
FOR THE EASTERN DISTRICT OF PENNSYLVANIA

---

STANFORD GLABERSON,

Plaintiff,

v.

COMCAST CORPORATION, ET AL.,

Defendants.

No. 03-6604

The Honorable John R. Padova

**REBUTTAL DECLARATION OF DR.  
TASNEEM CHIPTY**

January 15, 2014

---

Confidential  
Subject to Protective Order

## Table of Contents

I.	Introduction.....	1
II.	Summary of Opinions .....	2
III.	Relevant Background.....	4
	A. MediaPrints and Factbook Data.....	4
	B. Dr. Williams’ Methodology.....	6
	C. Dr. McClave’s Methodology .....	6
IV.	The <i>MediaPrints</i> Data Cannot Be Used to Reliably Identify Overlapping Cable Infrastructure.....	8
	A. MediaPrints Data Cannot Identify Overlapping Cable Infrastructure .....	8
	B. Dr. Williams Identifies Co-Location, Not Overlapping Infrastructure .....	9
V.	<i>Factbook</i> Subscriber Data Should Not Be Used to Evaluate Subscriber Penetration ....	13
	A. Factbook Subscriber Data Are Too Aggregated.....	13
	B. Missing Data Problems .....	15
	C. Inaccuracy of the Factbook Subscriber Data .....	15
	D. Overall Assessment.....	17
VI.	<i>Factbook</i> Ignores Overbuilding by Verizon and AT&T.....	18
VII.	Conclusions.....	19

## I. Introduction

1. My name is Tasneem Chipty. I am a Managing Principal of Analysis Group, Inc., an economic and business consulting firm headquartered in Boston, Massachusetts. I specialize in the fields of microeconomics, econometrics (the application of statistical methods to economic problems), and industrial organization (the study of how markets function, including competitive interactions among firms and consumer demand). I have served on the faculties of The Ohio State University, Brandeis University, and the Massachusetts Institute of Technology, where I taught courses in microeconomics, industrial organization, antitrust and regulation policy, and econometrics. I am the author or coauthor of several academic articles studying competition in the multichannel video programming distribution (“MVPD”) marketplace. These articles, which apply statistical methods to economic problems, have been published in leading peer-reviewed journals including the *American Economic Review* and the *Review of Economics and Statistics*. In my consulting work, I have designed and implemented statistical analyses of economic issues in matters involving broadcast, cable, and satellite television, broadcast and satellite radio, newspapers, and online distribution of entertainment content. I have served as a consultant to a variety of businesses in the entertainment industry as well as to the Department of Justice and the Federal Communications Commission (“FCC”) in media-related matters. I am also co-editor of the next edition of the American Bar Association’s *Proving Antitrust Damages*, currently under work. I received my Ph.D. in Economics from the Massachusetts Institute of Technology in 1993 and my B.A. degree in Economics and Mathematics from Wellesley College in 1989.

2. I am retained by counsel for Comcast Corporation (“Comcast”) to evaluate certain analyses performed by Plaintiff’s experts Dr. Michael Williams and Dr. James McClave in *Stanford Glaberson v. Comcast Corporation, et al.*<sup>1</sup> Plaintiff alleges that Comcast harmed competition by entering into a series of acquisitions and swaps of cable systems and other anticompetitive conduct that had the effect of deterring wireline

---

<sup>1</sup> Third Amended Class Action Complaint for Violations of the Sherman Antitrust Act, No. 03-6604, May 23, 2006; Plaintiffs’ Motion for Class Certification of Revised Philadelphia Class, No. 03-6604, August 19, 2013 (hereafter “Motion for Class”); and Class Plaintiffs’ Memorandum in Support Motion for Certification of Revised Philadelphia Class, No. 03-6604, August 19, 2013.

overbuilding in a five-county area near Philadelphia.<sup>2</sup> Dr. McClave attempts to determine how prices compare in overbuilt and non-overbuilt Comcast franchise areas, using Dr. Williams' identification of overbuilt Comcast areas based on *MediaPrints* and *Factbook* data. I have been asked to evaluate the reliability of the data and methodology used by Dr. Williams (and relied upon by Dr. McClave) to identify overbuilding and the validity of the overbuilt variables which are central to Dr. McClave's regression-based pricing model of overcharge associated with the alleged deterrence of overbuilding.<sup>3</sup> I was previously retained by Comcast to provide an economic assessment of the allegations in this matter, and I have previously submitted six expert reports.<sup>4</sup>

3. In preparing this report, I have relied on my training and extensive experience as an economist specializing in antitrust economics and econometrics, as well as my nearly 25 years of experience studying the cable television industry. The analysis I present in this report has been performed by me or under my direction. Analysis Group receives an hourly rate of \$685 for my services in this matter. My qualifications, education, and testimony experience were summarized in more detail in my prior reports. A copy of my current resume is attached as Appendix 1. A list of the additional materials that I have relied upon in this report is attached as Appendix 2.

## II. Summary of Opinions

4. In evaluating damages associated with the alleged deterrence of overbuilding, the central research question is how prices compare in overbuilt and non-overbuilt Comcast franchise areas. To answer this question, Dr. McClave used a regression model that relies on Dr. Williams' purported identification of *Factbook*-defined Comcast cable systems that have

---

<sup>2</sup> The five Pennsylvania counties are: Bucks; Chester; Delaware; Montgomery; and Philadelphia. See Motion for Class, p. 1.

<sup>3</sup> Second Supplemental Report of Dr. Michael A. Williams, No. 03-6604, August 19, 2013; Class Recertification Report of Dr. James T. McClave, No. 03-6604, August 19, 2013 (hereafter "McClave Report 2013"); Expert Declaration of Dr. Michael A. Williams, No. 03-6604, April 10, 2009; Supplemental Expert Declaration of Dr. Michael A. Williams, No. 03-6604, September 11, 2009; and Corrected Expert Declaration of Dr. James T. McClave, No. 03-6604, May 4, 2009 (hereafter "Corrected McClave Report 2009").

<sup>4</sup> Report of Dr. Tasneem Chipty, No. 03-6604, April 10, 2009; Declaration of Dr. Tasneem Chipty in Reply to Plaintiffs' Amended Motion to Certify the Philadelphia Cluster Class, No. 03-6604, May 6, 2009; Rebuttal Report of Dr. Tasneem Chipty, No. 03-6604, May 11, 2009; Supplemental Declaration of Dr. Tasneem Chipty, No. 03-6604, August 21, 2009; Declaration of Dr. Tasneem Chipty in Connection with Documents Produced by DIRECTV, No. 03-6604, September 18, 2009; and Corrected Rebuttal Report of Dr. Tasneem Chipty, No. 03-6604, June 6, 2012.

been overbuilt. Specifically, Dr. Williams attempted to implement a modified version of the FCC's test for effective competition in which a cable franchise is said to be "overbuilt" if at least two cable operators each offer service to at least 50 percent of households and at least 15 percent of the households subscribe to each competing cable operator.<sup>5</sup> Dr. Williams used data from *MediaPrints* and *Factbook* to classify certain Comcast *cable systems* as "overbuilt," and Dr. McClave attempted to use Dr. Williams' work to identify overbuilt Comcast *franchises*. However, as I explain in this report, these data were not designed and cannot be used to identify reliably which Comcast franchises are overbuilt and which are not.

- a. First, *MediaPrints* data do not contain sufficient information about the geographic footprints of cable operators to distinguish between co-location within geographic areas (such as cities or towns) and actual overbuilding. Co-location refers to the more common situation in which two cable operators have franchises that are adjacent to each other, but not overlapping. Overbuilding refers to the less common situation in which two cable operators have directly overlapping infrastructure such that households in the overlap geography have the option of selecting either cable operator. Simply observing that two cable operators are present in the same geographic area does not mean that the cable operators compete with each other for the same households. As a result, there are many examples of areas that Dr. Williams concludes are overbuilt where Comcast and another cable operator simply operate in adjacent areas.
- b. Second, neither *MediaPrints* nor *Factbook* data can be used to identify whether any *actual* overlap satisfies Dr. Williams' test for overbuilding. The *Factbook* subscriber data on which Dr. Williams and Dr. McClave rely are available only at the more aggregated *Factbook*-defined cable system level and, as such, cannot be used reliably to determine whether at least 50 percent of Comcast subscribers live in the portion of the *Factbook*-defined cable system that overlaps another wireline cable operator. To do so would require less aggregated subscriber data for narrower geographies. Moreover, the data suffer from missing information and inaccuracy problems. As I explain, each of these problems is individually important, but collectively, they render Dr. McClave's damages analysis unreliable.

---

<sup>5</sup> Corrected McClave Report 2009, p. 7.

- c. Third, *MediaPrints* and *Factbook* do not track information on Verizon FiOS and AT&T U-verse over the class period, even though they began competing directly with cable operators in select areas of the country beginning in 2005. As a result, Dr. Williams fails to identify overbuilding by these known wireline overbuilders.

5. Thus, Plaintiff's experts have no basis to reliably determine whether individual Comcast franchises are actually overbuilt. The data cannot be used to determine: (a) whether another wireline operator has overlapping cable infrastructure; or (b) whether the overlap, even if it exists, is sufficient to satisfy Dr. Williams' test.

### III. Relevant Background

6. Dr. Williams and Dr. McClave rely upon *Factbook* subscriber data and *MediaPrints* data on the geographic coverage of cable operators in order to identify overbuilt franchises. Dr. Williams attempts to determine which of the *Factbook*-defined Comcast cable systems are overbuilt, and Dr. McClave uses Dr. Williams' work in an attempt to determine which Comcast franchises are overbuilt and the extent of overbuilding in counties that Comcast serves.

#### A. *MediaPrints* and *Factbook* Data

7. To begin, Warren Communications News compiles and publishes the *Television and Cable Factbook* (referred to as the "*Factbook*") using a voluntary, annual survey of cable operators. In this survey, cable franchise managers are asked to respond to a series of questions, including questions about the communities and number of subscribers served by their cable operation.<sup>6</sup> Notably, a *Factbook* "community" is not a standardized geographic description and has no precise relationship with other known community definitions, including those of the FCC and the U.S. Census Bureau.<sup>7</sup> *Factbook* compiles this information into a database in which the unit of observation is a *Factbook*-defined "cable system."<sup>8</sup> These "cable systems" are groupings of communities which *Factbook* determines

<sup>6</sup> "Order the Television and Cable Factbook," *Warren Communications News*, available at <http://www.warren-news.com/fborder.htm>, accessed on January 8, 2014; and Email Correspondence between Analysis Group and John Hennessy, Director of Analytics and GIS, Budco, December 2-10, 2013 (hereafter "*MediaPrints* Correspondence").

<sup>7</sup> See, for example, *Warren Pub., Inc., v. Microdos Data Corp.*, 115 F.3d 1509, 1517 (11<sup>th</sup> Cir. 1997).

<sup>8</sup> A *Factbook*-defined cable system is also referred to as an "integrated cable area" or "ICA." *Factbook* 2009, Print Edition, p. D-7.

“receive essentially the same service at the same price from the same company.”<sup>9</sup> An example of a *Factbook*-defined Comcast cable system is “PA0027” which, in 2008, is described as serving several communities in Bucks County, Pennsylvania, including Bensalem Township, Falls Township, and Lower Southampton.<sup>10</sup>

8. In an attempt to provide more precise geographic definition to these *Factbook* areas, Warren Publishing has a business relationship with Budco, the company that publishes the *MediaPrints* data.<sup>11</sup> Specifically, Budco attempts to identify the Census Block Groups associated with the reported communities served by the *Factbook*-defined cable systems.<sup>12</sup> Census Block Groups are U.S. Census Bureau-defined geographic boundaries that typically vary in size.<sup>13</sup> As an example, Exhibit 1 displays a map of Census Block Groups in the five-county area surrounding Philadelphia, with each individual grey cell corresponding to a Census Block Group. As seen from this map, Census Block Groups have varying geographic footprints. Census Block Groups are smaller in densely populated areas, such as downtown Philadelphia, than they are in less densely populated areas, such as Bucks County.<sup>14</sup> For example, *MediaPrints* associated 151 Census Block Groups with *Factbook*-defined Comcast cable system PA0027 in the first quarter of 2008.<sup>15</sup> Exhibit 2A extends Exhibit 1 and shows the presence of *Factbook*-defined cable system PA0027 as identified by *MediaPrints*, and Exhibit 2B presents a zoomed-in version of the same map. However, there is no guarantee that cable providers operate in the entirety of all of the *MediaPrints* identified Census Block Groups. They may operate in only portions of the specified community and, as such, in only a subset of its Census Block Groups. It may also be that the cable operator operates in only portions of a Census Block Group, not its entirety. Neither *Factbook* nor *MediaPrints* has sufficient information to make that determination.

<sup>9</sup> *Factbook* 2009, Print Edition, p. D-7.

<sup>10</sup> *Factbook* 2008.

<sup>11</sup> “Home Page,” *MediaPrints*, available at <http://www.mediaprints.com/index.htm>, accessed on January 8, 2014.

<sup>12</sup> *MediaPrints* Correspondence.

<sup>13</sup> “2010 Geographic Terms and Concepts - Block Groups - Geography - U.S. Census Bureau,” *United States Census Bureau*, available at [http://www.census.gov/geo/reference/gtc/gtc\\_bg.html](http://www.census.gov/geo/reference/gtc/gtc_bg.html), accessed on January 8, 2014.

<sup>14</sup> Similarly, there is substantial variation in the number of households within the Census Block Groups of the five-county area. For example, in Bucks County, the smallest Census Block Group has 20 households, the average has 585 households, and the largest has more than 2,500 households. See calculation in backup materials.

<sup>15</sup> See calculation in backup materials.

9. *MediaPrints* does not collect any additional information from cable operators. As such, *MediaPrints* simply reproduces the *Factbook* subscriber data. These data are only available at the *Factbook*-defined cable system level because neither *MediaPrints* nor *Factbook* has sufficient information to further disaggregate the subscriber data.

### **B. Dr. Williams' Methodology**

10. Dr. Williams uses *MediaPrints* data (at the Census Block Group-level) to determine whether each *Factbook*-defined Comcast cable system is overbuilt, for each quarter from 2003 through 2008.<sup>16,17</sup> To identify overbuilt cable systems, Dr. Williams analyzes whether a *Factbook*-defined Comcast cable system's Census Block Groups are also associated with another *Factbook*-defined cable system run by a different cable operator. Specifically, he applies a two-pronged test. If there is an overlap of at least 50 percent of the Census Block Groups associated with the *Factbook*-defined Comcast cable system, and if multiple cable operators (based on the *Factbook* subscriber data) serve at least 15 percent of subscribers in the cable system footprint, then Dr. Williams would identify that *Factbook*-defined Comcast cable system as "overbuilt."<sup>18</sup> Using his methodology, Dr. Williams identifies 95 *Factbook*-defined Comcast cable systems as "overbuilt" in at least one quarter from 2003 to 2008, out of a total of 1,404 *Factbook*-defined Comcast cable systems that appear in the *MediaPrints* data during these years.<sup>19</sup> Dr. Williams provides this information to Dr. McClave, who then uses it to model the overcharge associated with the alleged deterrence of overbuilding.

### **C. Dr. McClave's Methodology**

11. Dr. McClave uses the overbuild information from Dr. Williams to develop and implement a regression-based price model in an attempt to study price differences in overbuilt and non-overbuilt Comcast franchises.<sup>20</sup> Dr. McClave's regression model aims to

---

<sup>16</sup> Corrected McClave Report 2009, p. 7.

<sup>17</sup> Dr. Williams' analysis excludes *MediaPrints* data from the fourth quarter of 2004.

<sup>18</sup> McClave Report 2013, footnote 8 (quoting Corrected McClave Report 2009, p. 7).

<sup>19</sup> Dr. Williams' 95 "overbuilt" *Factbook*-defined Comcast cable systems account for 879 cable system-quarter observations, out of a total of 16,056 total *Factbook*-defined Comcast cable system-quarters from 2003 to 2008. See calculation in backup materials.

<sup>20</sup> Dr. McClave explains that Dr. Williams' team prepared the input data he uses to identify overbuilding. (See Corrected McClave Report 2009, p. 7.) Dr. McClave uses these Williams-produced datasets to construct his overbuilt variables in his most recent August 2013 report. Specifically, Dr. McClave uses a data file produced with Dr. Williams' April 10, 2009 expert report ("From DVD\Data Production



control for two different overbuild variables. The first variable is intended to be a binary variable that attempts to identify whether the Comcast franchise was overbuilt by another wireline provider in that year. The second variable is intended to measure the percentage of households that were overbuilt in the county associated with the Comcast franchise.<sup>21</sup>

Central to the construction of both of these variables – and indeed to the entire exercise – is the ability to reliably identify locations where Comcast was overbuilt.

12. To this end, Dr. McClave attempts to match the *Factbook*-defined Comcast cable systems that Dr. Williams identified as “overbuilt” to franchise-level data from the Comcast billing reports (that have information on prices).<sup>22</sup> It appears that Dr. McClave implements this match manually by pairing the community names associated with the *Factbook*-defined cable system’s Census Block Groups and the brief, high-level text descriptions regarding where that franchise is located (e.g., “North Shores, City,” “Washington County”) contained in Comcast internal reports.<sup>23</sup> He is only able to match some of Dr. Williams’ 95 “overbuilt” *Factbook*-defined Comcast cable systems. Specifically, he uses 49 to create the franchise-level “overbuilt” variable used in his regression, and he uses 55 (the 49 plus an additional six) to create the county-level “percent of county overbuilt” variable used in his regression.<sup>24</sup>

13. Largely because of the data inadequacies that I describe below and the faulty assumptions embedded in Dr. Williams’ overbuild analysis, Dr. McClave’s analysis is

---

DONE\Overbuilder\Overbuilder.zip”) and a data file produced with Dr. Williams’ September 11, 2009 expert report (“Overbuilder 2008 for Production Final.zip”).

<sup>21</sup> McClave Report 2013, pp. 5-6.

<sup>22</sup> The billing reports are generated from Comcast’s “Amdocs” and “CSG” billing systems. See Corrected McClave Report 2009, pp. 3-4, 7-8.

<sup>23</sup> It is unclear what process Dr. McClave follows to implement his match. For example, the billing reports do not contain specific information regarding the geographic boundaries or location of the franchise. His backup does not contain any description of his methodology. See Csgprc\_cuidx3.sas7bdat and All\_1MonthDB02HU.sas7bdat in Backup Production to McClave Report 2013.

<sup>24</sup> Based on a review of his programming code and related backup material, it appears that Dr. McClave drops 46 of Dr. Williams’ 95 “overbuilt” *Factbook*-defined cable systems when constructing his binary variable indicating overbuilding. Some of these are dropped because they are located in the Boston and Chicago at-issue areas, and some are dropped because they are missing data for one of the control variables in his model. However, it appears that the majority are dropped because he is unable to match franchises to those “overbuilt” *Factbook*-defined cabled systems. To the extent Dr. McClave’s analysis includes Comcast franchises that should have been matched, he would inaccurately treat them as not overbuilt. See calculations in backup materials.

predicated on unreliable data.<sup>25</sup> As I show below, these data are severely flawed and significantly in error.

#### **IV. The *MediaPrints* Data Cannot Be Used to Reliably Identify Overlapping Cable Infrastructure**

14. Head-to-head competition with another wireline cable operator requires overlapping cable infrastructure such that both operators are able to provide subscription television service to the same households. For this reason, the first prong of the FCC's test for effective competition requires at least a 50 percent overlap of a franchise's households. In an attempt to adopt this criterion, Dr. Williams uses *MediaPrints* data to identify whether there is at least a 50 percent overlap of a *Factbook*-defined Comcast cable system's Census Block Groups. I explain here why the *MediaPrints* data used by Plaintiff's experts cannot be used to identify overlapping cable infrastructure and why using them to do so confuses co-location and actual overlap.

##### **A. *MediaPrints* Data Cannot Identify Overlapping Cable Infrastructure**

15. That a *Factbook*-defined cable system serves a particular community does not mean that the cable system has a presence in *all* of the Census Block Groups of that community. According to *MediaPrints*, there is a distinction between the *communities served* by a cable provider, and the provider's *infrastructure build-out* within each community.<sup>26</sup> *MediaPrints* data identifies the former, but not the latter. As *MediaPrints* explains in correspondence with my team: "[We] really don't have any knowledge of the [cable system's] coverage. We just know that the [c]able system manager has reported that they serve a community."<sup>27</sup> In response to the question:

If two ICAs [*Factbook*-defined cable systems] are associated with the same Census Block Group, does that mean that both ICAs [*Factbook*-defined cable systems] have the exact same service area within that Census Block Group? Or, is it possible that there is no overlap in the homes serviced by the two ICAs within that Census Block Group?<sup>28</sup>

---

<sup>25</sup> There are other problems with Dr. McClave's analysis that I do not discuss here.

<sup>26</sup> *MediaPrints* Correspondence.

<sup>27</sup> *MediaPrints* Correspondence.

<sup>28</sup> *MediaPrints* Correspondence.

*MediaPrints* responded, “[W]e don’t have any insight into this. Our focus is on the community served by [c]able not the actual fiber buildout in the community.”<sup>29</sup>

16. Fundamentally, the *MediaPrints* data were not designed to and are incapable of identifying the existence of *overlapping* cable infrastructure in local communities. Accordingly, they cannot serve as a basis for determining the presence of overbuilding. Yet, Dr. Williams and Dr. McClave ignore this fatal limitation of the data.

**B. Dr. Williams Identifies Co-Location, Not Overlapping Infrastructure**

17. The first step of Dr. Williams’ methodology for determining overbuilding is a determination of sufficient overlap in cable infrastructure. Specifically, for each *Factbook*-defined Comcast cable system, Dr. Williams evaluates whether another cable operator has a cable system that is associated with the same Census Block Groups. He classifies a cable system as having sufficient overlap if at least 50 percent of its Census Block Groups are associated with those of one or more other cable operators.

18. Consider, for example, the *Factbook*-defined Comcast cable system PA0388, which Dr. Williams identifies as overbuilt in 2005 and 2006. In the first quarter of 2006, *Factbook* reports that PA0388 served several communities in Armstrong County Pennsylvania, including Bethel Township, Ford City, and Washington Township.<sup>30</sup> *MediaPrints* associated 28 Census Block Groups with PA0388. These are depicted in Exhibit 3A. Dr. Williams searched the *MediaPrints* data and determined that one other cable system served customers in some of the same Census Block Groups. In particular, he determined that *Factbook*-defined Adelphia cable system PA0320 was associated with 279 Census Block Groups, 16 of which were also associated with Comcast’s PA0388. Exhibit 3B depicts in the green-shaded area the Census Block Groups of PA0320. Exhibit 3C depicts the overlapping Census Block Groups: the blue-shaded area represents the 12 Census Block Groups associated with only Comcast’s PA0388; the green-shaded area represents the 263 Census Block Groups associated with only Adelphia’s PA0320; and the orange-shaded region represents the 16 common Census Block Groups. Based on this information, Dr. Williams concluded that these *Factbook*-defined Comcast and Adelphia cable systems overlapped each other in the first quarter of 2006. Further, he determined that there was a 57 percent overlap

---

<sup>29</sup> *MediaPrints* Correspondence.

<sup>30</sup> *Factbook* 2006.

(calculated as 16 divided by 28) of the Comcast cable systems' Census Block Groups, which satisfied the 50 percent prong of his test for overbuilding.

19. However, the *MediaPrints* data cannot distinguish between co-location within geographic areas (such as cities or towns) and actual overbuilding. I investigated whether Comcast's PA0388 actually overlapped Adelphia's PA0320 in two different ways. First, I looked to the record in Comcast and Time Warner's 2006 joint bid for Adelphia's cable franchises. In that transaction, Comcast acquired Adelphia's Ford City franchise, located in the orange-shaded area of Exhibit 3C.<sup>31</sup> In the information Comcast provided to the FCC as part of the merger review process, Comcast represented that it did not compete for customers in the same geographic market served by Adelphia's Ford City franchise or any other Adelphia franchise that it proposed to acquire.<sup>32</sup> Based on this information (and similar information provided by Time Warner Cable), the FCC concluded, "The proposed transactions...involve the acquisition of customers in geographic markets not previously served by the acquiring firm."<sup>33</sup> Second, my team asked Comcast whether in fact they faced direct competition with Adelphia (or any other cable operator) in any portion of the communities served by *Factbook*-defined Comcast cable system PA0388 in early 2006. I learned that Comcast did not compete directly with any other cable operator in the communities served by PA0388 over the years Dr. Williams identified it as overbuilt. In addition, I learned that Comcast served a portion of some of the same communities also served by Adelphia, but Adelphia served a different portion of those communities.<sup>34</sup> Thus, contrary to Dr. Williams' conclusion, there was no overlap in the cable infrastructures of the two cable operators.

20. Further, Dr. Williams misidentifies different types of wireline cable operators as "overbuilders" in different regions of the country. For example:

<sup>31</sup> "Exchange Agreement Dated as of April 20, 2005 By and Among Comcast Corporation, Time Warner Cable Inc., Time Warner NY Cable LLC, and The Other Parties Named Herein," COM-DPW0108317-503, at 322-323, 475.

<sup>32</sup> Comcast's Response to FCC Request II A 10, COM-PA1972624.

<sup>33</sup> FCC's Opinion and Memorandum, *In the Matter of Applications for Consent to the Assignment and/or Transfer of Control of Licenses Adelphia Communications Corporation, (and subsidiaries, debtors-in-possession), Assignors, to Time Warner Cable Inc. (subsidiaries), Assignees; Adelphia Communications Corporation, (and subsidiaries, debtors-in-possession), Assignors and Transferors, to Comcast Corporation (subsidiaries), Assignees and Transferees; Comcast Corporation, Transferor, to Time Warner Inc., Transferee; Time Warner Inc., Transferor, to Comcast Corporation, Transferee*, July 21, 2006, FCC-06-105A1, ¶ 80, available at [http://hraunfoss.fcc.gov/edocs\\_public/attachmatch/FCC-06-105A1.pdf](http://hraunfoss.fcc.gov/edocs_public/attachmatch/FCC-06-105A1.pdf).

<sup>34</sup> "#85491783v1 - (2014.01.14.Franchises.Backup).PDF."

- a. *Factbook*-defined Comcast cable system FL0326, which Dr. Williams identified as overbuilt in 2003 and 2004 by *Factbook*-defined Time Warner cable system FL0076: In the third quarter of 2004, Comcast's FL0326 served several communities in Lake and Putnam County Florida, including Fruitland and Palatka,<sup>35</sup> and *MediaPrints* associated 29 Census Block Groups with this *Factbook*-defined Comcast cable system. Time Warner's FL0076 served a collection of communities that contained parts of 45 Census Block Groups, 22 of which were also contained by the communities of Comcast's cable system FL0326. Based on this information, Dr. Williams determined that there was a 76 percent overlap (calculated as 22 divided by 29) of the Comcast cable system's Census Block Groups in the third quarter of 2004, which satisfied the 50 percent prong of his test. According to Comcast, however, it did not compete directly with Time Warner (or any other cable operator) in the communities served by FL0326 during the years 2003 or 2004.<sup>36</sup>
- b. *Factbook*-defined Comcast cable system TN0052, which Dr. Williams identified as overbuilt in 2008 by *Factbook*-defined Charter cable system TN0009: In the third quarter of 2008, Comcast's TN0052 served portions of Cheatham County Tennessee, including the community of Ashland City,<sup>37</sup> and *MediaPrints* associated eight Census Block Groups with this *Factbook*-defined Comcast cable system. Charter's TN0009 served a collection of communities that contained parts of 62 Census Block Groups, including the eight Census Block Groups associated with Comcast's TN0052. Based on this information, Dr. Williams determined that there was a 100 percent overlap of the Comcast cable system's Census Block Groups in the third quarter of 2008, which satisfied the 50 percent prong of his test. According to Comcast, however, it did not compete directly with Charter (or any other cable operator) in the communities served by TN0052 during 2008.<sup>38</sup>
- c. *Factbook*-defined Comcast cable system WA0021, which Dr. Williams identified as overbuilt in 2003, 2004, and 2005 by Wave Broadband cable system WA0085: In the third quarter of 2004, Comcast's WA0021 served portions of Snohomish County

---

<sup>35</sup> *Factbook* 2004.

<sup>36</sup> "#85491783v1 - (2014.01.14.Franchises.Backup).PDF."

<sup>37</sup> *Factbook* 2008.

<sup>38</sup> "#85491783v1 - (2014.01.14.Franchises.Backup).PDF."

Washington, including the community of Arlington,<sup>39</sup> and *MediaPrints* associated 22 Census Block Groups with this Factbook-defined Comcast cable system. Wave Broadband's WA0085 served a collection of communities that contained parts of 24 Census Block Groups, including the 22 served by Comcast's WA0021. Based on this information, Dr. Williams determined that there was a 100 percent overlap (calculated as 22 divided by 22) of the Comcast cable system's Census Block Groups in the third quarter of 2004, which satisfied the 50 percent prong of his test. According to Comcast, however, it did not compete directly with Wave Broadband (or any other cable operator) in the communities served by WA0021 during the years 2003, 2004, or 2005.<sup>40</sup>

- d. *Factbook*-defined Comcast cable system OH0181, which Dr. Williams identified as overbuilt from 2003 through 2008 by one or more of *Factbook*-defined Jefferson County Cable cable system OH0371, Community TV Systems Cable OH0346, and Cebridge Connections cable system OH0203: In the third quarter of 2004, Comcast's OH0181 served several communities in Harrison County and Jefferson County Ohio, including Adena and Harrisville,<sup>41</sup> and *MediaPrints* associated four Census Block Groups with this Comcast cable system. In the same quarter, Jefferson County Cable's OH0371 was associated with 13 Census Block Groups, and Cebridge Connections' OH0203 was associated with four Census Block Groups. In total, either Jefferson County Cable's cable system or Cebridge Connections' cable system were also associated with three of the four Comcast OH0181 Census Block Groups. Based on this information, Dr. Williams determined that there was a 75 percent overlap of the Comcast cable system's Census Block Groups in the third quarter of 2004, which satisfied the 50 percent prong of his test. However, Comcast confirmed that it did not compete directly with any cable operator in the communities served by OH0181 in the third quarter of 2004 or at any other period during the years 2003 through 2008.<sup>42</sup>

21. The inability to distinguish between co-location and overbuilding is likely to affect a substantial portion of Dr. McClave's regression sample and, as such, render his

---

<sup>39</sup> *Factbook* 2004.

<sup>40</sup> "#85491783v1 - (2014.01.14.Franchises.Backup).PDF."

<sup>41</sup> *Factbook* 2004.

<sup>42</sup> "#85491783v1 - (2014.01.14.Franchises.Backup).PDF."

analysis reliable. For example, Dr. McClave matches Comcast franchises to each of the five *Factbook*-defined Comcast cable systems discussed above, and he mistakenly classifies them as overbuilt. This misclassification affects both Dr. McClave's franchise and county-level measures of overbuilding. The errors in *these five examples alone* affect about 16 percent of the franchise-year observations that Dr. McClave identifies as being overbuilt in his regression.<sup>43</sup>

## **V. *Factbook* Subscriber Data Should Not Be Used to Evaluate Subscriber Penetration**

22. The subscriber data used by Dr. Williams for the second prong of his two-pronged test for overbuilding is equally unreliable and flawed. Dr. Williams uses these data in an attempt to determine whether a wireline cable operator – that he believes competes directly for the subscribers with Comcast – has attained at least 15 percent of cable subscribers within the Census Block Groups of the *Factbook*-defined Comcast cable system.<sup>44</sup> As I explain here, the *Factbook* subscriber data suffer from three types of data quality issues: (a) aggregation problems; (b) missing data problems; and (c) data inaccuracy problems.

### **A. *Factbook* Subscriber Data Are Too Aggregated**

23. The *Factbook* subscriber data (when available) are available only at the *Factbook*-defined cable system level. Dr. Williams' methodology, however, requires subscriber data at the Census Block Group level. To illustrate the problem, I describe *Factbook*-defined RCN cable system PA0447. According to *Factbook*, RCN had 120,000 subscribers in this cable system, in each quarter from Q2, 2007 to Q4, 2008. According to *MediaPrints*, this cable system is associated with 225 Census Block Groups, 176 of which are in Delaware County, Pennsylvania and 49 of which are in Bucks County, Pennsylvania. Exhibit 4 depicts in the green-shaded area the Census Block Groups of PA0447 in a map. Exhibit 5 presents the *Factbook* subscriber data and *MediaPrints* determined geographic footprint for this cable system, for each quarter from 2003 to 2008. The first three columns of Exhibit 5 present the raw data, and the last two columns of Exhibit 5 present the apportionment of subscribers across the two counties using Dr. Williams' apportionment

<sup>43</sup> See calculation in backup materials.

<sup>44</sup> Corrected McClave Report 2009, p. 7.



methodology. If Dr. Williams were to calculate the number of PA0447 subscribers in Delaware and Bucks Counties, respectively, he would begin by apportioning the 120,000 subscribers evenly across the 225 Census Block Groups, for an average of 533 subscribers per Census Block Group (computed as 120,000 divided by 225). He would further calculate that 78 percent or 93,867 (computed as 533 times 176) of the 120,000 subscribers reside in Delaware County and the remaining 22 percent or 26,133 subscribers reside in Bucks County. There are two obvious problems with this calculation.

- a. First, RCN did not operate in Bucks County from 2003 to 2008.<sup>45</sup> Thus, blindly applying Dr. Williams' methodology would create the impression that RCN is less of a competitive presence in Delaware County (and more of a competitive presence in Bucks County) than it actually is.
- b. Second, as is apparent from the illustration of the RCN Census Block Groups in Delaware County, shown in Exhibit 4, there is wide variation in the size of the individual Census Block Groups. For example, according to the U.S. Census Bureau, the largest of the RCN Census Block Groups in Delaware County has 1,251 households and the smallest has 154 households. Exhibit 6 presents the distribution of households for all 176 RCN Census Block Groups in Delaware County. Of these 73 percent or 128 Census Block Groups have fewer households in total than the 533 households that Dr. Williams would claim were subscribing to RCN from each of those Census Block Groups.<sup>46</sup>

24. Ultimately, the *MediaPrints* and *Factbook* data provide no basis to disaggregate *Factbook*-defined cable system-level subscribers to individual Census Block Groups, as Dr. Williams needs. To do so would require research for each individual *Factbook*-defined cable system to determine the subset of Census Blocks in which they actually have infrastructure build-out and operate. It would also require a basis for apportioning subscribers across those active Census Block Groups. Dr. Williams has not

---

<sup>45</sup> Deposition of Laura Burke, Regional Director of Marketing for Comcast, April 25, 2008, pp. 29-31 and Exhibit 1 ("2008 RCN Regional Coverage: Philadelphia"). See also Defendants' Motion for Summary Judgment, *Caroline Behrend, et al. v. Comcast Corporation, et al.*, No. 03-6604-cv, March 5, 2010, at 54-56.

<sup>46</sup> Assigning all of RCN PA0447 subscribers to only its Delaware County Census Block Groups, Dr. Williams' allocation method is shown to be even more problematic. In this case, over 90 percent of the Census Block Groups have fewer households in total than the 681 households that Dr. Williams would claim were subscribing to RCN from each of those Census Block Groups.



done that research nor has he provided a credible basis for his apportionment methodology. Either way, the *MediaPrints* and *Factbook* data are inadequate for this purpose.

### **B. Missing Data Problems**

25. The *Factbook* data (and as such Dr. Williams' methodology and Dr. McClave's analysis) suffer from missing data problems. Specifically: (a) *Factbook*-defined Comcast cable systems are missing subscriber data in almost 15 percent of the *Factbook*-defined cable system quarters; (b) *Factbook*-defined RCN cable systems are missing subscriber data in about 36 percent of the *Factbook*-defined cable system quarters, and (c) *Factbook*-defined WideOpenWest cable systems are missing subscriber data in about 52 percent of the *Factbook*-defined cable system quarters. RCN and WideOpenWest were the nation's two largest overbuilders during the class period.<sup>47</sup> Moreover, these and other potential overbuilders with missing subscriber data overlap a significant portion of the *Factbook*-defined Comcast cable systems.<sup>48</sup> In these instances, Dr. Williams simply ignored missing subscriber data and classified the Comcast cable system as not overbuilt, rendering his conclusions (and Dr. McClave's model) unreliable.

### **C. Inaccuracy of the Factbook Subscriber Data**

26. The *Factbook* subscriber data that Dr. Williams uses are often inaccurate and misleading. For example, *Factbook* reports Comcast subscribers in Bucks County – in *Factbook*-defined Comcast cable system PA0027 (shown in Exhibit 2B) – as increasing from 46,882 in Q3 2007 to 1,125,000 by Q4 2007, and *MediaPrints* reports no change in the Census Block Groups contained in this cable system. Yet, according to the U.S. Census Bureau, there were only 218,725 households in all of Bucks County and only 74,993 households within the smaller geography of PA0027's Census Block Groups, in 2000.<sup>49</sup> These numbers of households have grown more modestly than the *Factbook*-reported Comcast subscribers in Bucks County. For example, total households in all of Bucks County grew by about four percent, from 218,725 in 2000 to 227,909 in 2007.<sup>50</sup> Thus, the 2007

<sup>47</sup> Twelfth Annual Report, *In the Matter of Annual Assessment of the Status of Competition in the Market for the Delivery of Video Programming*, March 3, 2006, FCC-06-11, ¶ 89.

<sup>48</sup> See calculation in backup materials.

<sup>49</sup> See calculation in backup materials.

<sup>50</sup> "American FactFinder – Table DP02, Selected Social Characteristics in the United States: 2007, 2007 American Community Survey 1-Year Estimates," *United States Census Bureau*, available at

*Factbook*-reported Comcast subscribers for PA0027 exceed the total number of potential subscribers in that year by about a factor of 14.

27. To assess the accuracy of the non-missing *Factbook* subscriber data more generally, I compare – where possible – *Factbook* data on Comcast subscribers to Comcast subscribers from the Comcast billing reports, Amdocs and CSG, that Dr. McClave used based on his own matches of Comcast franchises with *Factbook*-defined Comcast cable systems. If the *Factbook* data are accurate and Dr. McClave's match of the Comcast franchise to the *Factbook* cable systems is reliable, one would expect little difference between the subscribers reported by *Factbook* and those calculated using Comcast's internal data. But, this is not generally the case. Furthermore, assuming Dr. McClave has not erroneously matched a Comcast franchise to a *Factbook*-defined cable system, there should be no reason for the *Factbook* Comcast subscribers ever to be materially *less than* those calculated using Comcast's internal data. However, this discrepancy is present in about 30 percent of the cable system-years in which Dr. McClave matches Comcast franchises to *Factbook*-defined cable systems.<sup>51</sup> Exhibit 7 shows the magnitude of the discrepancy over this set of *Factbook*-defined cable system-years for which I am able to study data accuracy. As is clear, the difference often exceeds 50 percent of the number of *Factbook*-reported subscribers.

28. The bad subscriber data can and does affect Dr. Williams' identification of overbuilt franchises. As one example, I describe *Factbook*-defined Comcast cable system CA0043, which serves communities in Santa Cruz County, California. Dr. Williams identifies CA0043 as being overbuilt by Charter Communications for all years from 2003 through 2008. Exhibit 8 displays the *Factbook* Comcast subscribers (Column [A]) and the associated Comcast subscribers calculated using Comcast internal data and Dr. McClave's franchise match (Column [B]), by year.<sup>52</sup> Over this time period, the *Factbook* data show that Comcast had around 50,000 subscribers in cable system CA0043. By contrast, Comcast's own data show that between 2006 and 2008, it had between 72,000 and 100,000 subscribers across the franchises that comprise this cable system. Columns [C] and [D] of Exhibit 8

---

[http://factfinder2.census.gov/faces/tableservices/jsf/pages/productview.xhtml?pid=ACS\\_07\\_1YR\\_DP2&prodType=table](http://factfinder2.census.gov/faces/tableservices/jsf/pages/productview.xhtml?pid=ACS_07_1YR_DP2&prodType=table), accessed on January 13, 2014.

<sup>51</sup> In the remaining cable system-years, the *Factbook* Comcast subscribers are materially greater than Comcast's internal data. See calculation in backup materials.

<sup>52</sup> I calculate the Comcast-reported subscribers associated with the CA0043 by summing up Comcast subscribers from Comcast internal data across the four Comcast franchises that Dr. McClave matches to CA0043. See backup calculations.

display the percentage of subscribers in the *MediaPrints*-reported footprint of CA0043 that are Charter subscribers. Column [C] reports this percentage when using the erroneous *Factbook* Comcast subscriber data presented in Column [A], and Column [D] reports the percentage when using Comcast's own internal data in Column [B]. After replacing the *Factbook* data with the data from Comcast, Charter's percentage of subscribers falls to below 15 percent for the years from 2006 through 2008, meaning that CA0043 would no longer be identified as "overbuilt" according to Dr. Williams' algorithm in these years.

29. Finally, I observe that it is only possible to verify the *Factbook* subscriber data for certain Comcast cable systems, both because it is difficult to match Comcast franchises to *Factbook*-defined cable systems and because other cable operators have not produced data for this case. However, the degree of errors of the *Factbook*-reported subscriber data for Comcast cable systems I was able to check leads me to question the reliability of the subscriber counts for other cable operators. Given that these subscriber numbers are integral inputs in Dr. Williams' analysis, this evidence casts further doubt on his ability to reliably infer overbuilding. It appears that Dr. McClave would agree, given his previous statement:<sup>53</sup>

Although this level of price verification cannot be performed for the non-Comcast *Factbook* prices, the degree of error as to the Comcast *Factbook* prices is so great in those that can be checked that in my opinion **no responsible statistician would place reliance on any of those *Factbook* prices that cannot be checked.**

The same sentiment applies to the prospect of subscriber verification and the associated accuracy of Dr. McClave's two overbuilder variables.

#### ***D. Overall Assessment***

30. Careful review of the subscriber data underlying Dr. Williams' and Dr. McClave's overbuilder analysis reveals serious and widespread data problems. *Factbook* subscriber data are only available at the more aggregated *Factbook*-defined cable system level, and Dr. Williams has no basis for apportioning them evenly across a cable system's Census Block Groups. Moreover, the data suffer from missing information and inaccuracy problems. These errors are widespread and will likely result in a high degree of both false negative and false positive inferences about overbuilding. While I have not verified the accuracy of every observation in Dr. Williams' analysis, given the nature and extent of the problems uncovered, I conclude that it would be irresponsible to rely on the *Factbook*

---

<sup>53</sup> Expert Rebuttal Declaration of Dr. James T. McClave, May 11, 2009, p. 7. (Emphasis added.)

subscriber data to determine overbuilding. Thus, it is my assessment that the data are fatally flawed and that no “fix” exists.

## **VI. Factbook Ignores Overbuilding by Verizon and AT&T**

31. During the Class period, the *Factbook* data did not include information on Verizon and AT&T cable systems. Yet, Verizon and AT&T began to roll out their FiOS and U-verse products beginning in 2005.<sup>54</sup> Thus, Dr. Williams and Dr. McClave systematically ignore wireline overbuilding by Verizon and AT&T during the latter portion of the Class period.

32. Using publicly available information, I identified Comcast franchises used in Dr. McClave’s regression analysis which likely faced direct competition by either FiOS or U-verse during the Class period, but Dr. McClave and Dr. Williams did not (and could not) consider as being potentially overbuilt. For example, Dr. McClave includes eight Comcast franchises in his regression sample for 2007 and 2008 (and 16 franchise-year observations) that operate within the Prince George’s County, Maryland communities of Bowie, Hyattsville, Laurel, Seat Pleasant, Capitol Heights, Riverdale, and Upper Marlboro and the Charles County, Maryland community of Waldorf.<sup>55</sup> Dr. McClave treats each of these franchises as not overbuilt for both years, though according to a Verizon press release FiOS was offered in portions of these communities since at least May 15, 2007.<sup>56</sup> Another example is found from Dr. McClave’s regression sample for 2007 and 2008 with four Comcast franchises (accounting for eight franchise-year observations) that operate within the Santa Clara County, California communities of Cupertino and Saratoga.<sup>57</sup> Dr. McClave indicates that these four franchises were not overbuilt for either year, however, according to an AT&T press release U-verse was offered in parts of these communities since December 21,

---

<sup>54</sup> “AT&T U-verse Timeline,” *AT&T*, 2008, available at <http://www.att.com/Common/merger/files/pdf/U-verse%20Timeline41907.pdf>, accessed on January 8, 2014; and “Verizon Introduces Fiber Optic TV Service,” *The New York Times*, September 23, 2005, available at [http://www.nytimes.com/2005/09/23/technology/23verizon.html?\\_r=3&pagewanted=print&](http://www.nytimes.com/2005/09/23/technology/23verizon.html?_r=3&pagewanted=print&), accessed on January 8, 2014.

<sup>55</sup> See backup materials.

<sup>56</sup> “Verizon Expands FiOS TV Availability in Prince George’s County, Md.,” *Verizon*, May 15, 2007, available at <http://newscenter2.verizon.com/press-releases/verizon/2007/verizon-expands-fios-tv-6.html>, accessed on January 13, 2014.

<sup>57</sup> See backup materials.

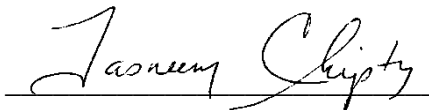
2006.<sup>58,59</sup> The lack of *Factbook* (and as such, *MediaPrints*) coverage of these two important wireline overbuilders during the relevant time period provides more evidence showing that these data cannot be used to determine reliably whether a Comcast franchise was overbuilt.

## VII. Conclusions

33. For all of the reasons described in this report, I conclude that the *MediaPrints* and *Factbook* data which underlie Plaintiff's damage analyses are inadequate for the purpose of identifying overbuilt Comcast franchises. As such, one cannot draw reliable inferences about the effect of overbuilding on prices from statistical analyses, like those conducted by Dr. McClave, with these data.

I declare under penalty of perjury that the foregoing is true and correct.

January 15, 2014



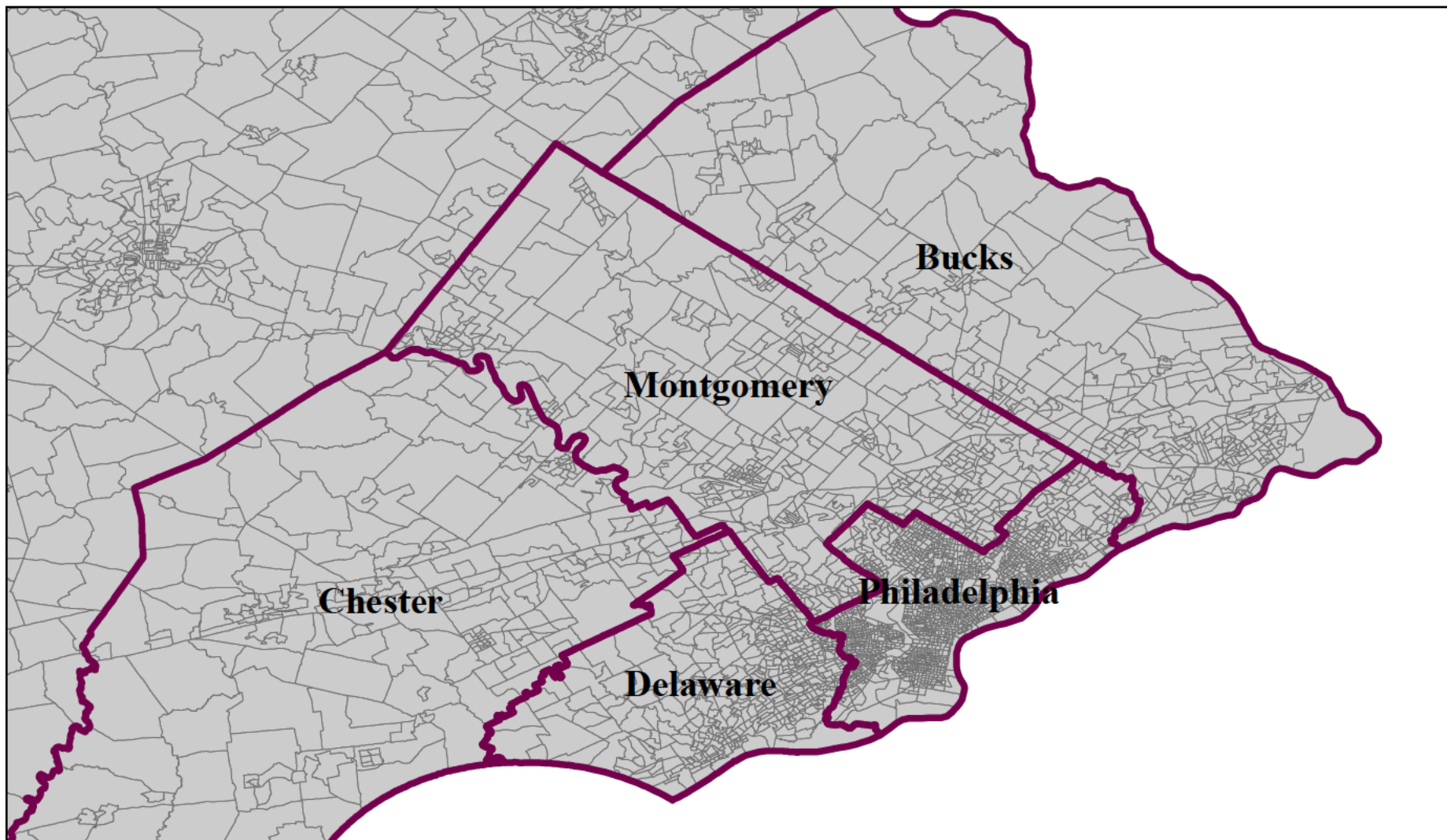
Dr. Tasneem Chipty

---

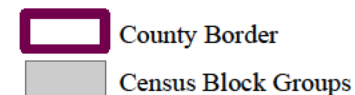
<sup>58</sup> "AT&T Introduces U-verse in San Jose Area," *AT&T*, December 21, 2006, available at <http://www.att.com/gen/press-room?pid=4800&cdvn=news&newsarticleid=23275>, accessed on January 13, 2014.

<sup>59</sup> These are not the only examples. See also "AT&T Introduces U-verse in Stamford Area," *AT&T*, December 27, 2006, available at <http://www.att.com/gen/press-room?pid=4800&cdvn=news&newsarticleid=23283>, accessed on January 10, 2014; and "Portions of North Port, Florida, Join Growing FiOS Triple-Play Availability in Sarasota County," *Verizon*, October 10, 2007, available at <http://newscenter2.verizon.com/press-releases/verizon/2007/portions-of-north-port.html>, accessed on January 9, 2014.

**Exhibit 1**  
**Census Block Groups in the Five at-Issue Philadelphia-Area Counties**



Note: These Census Block Group boundaries correspond to the 2000 Census.



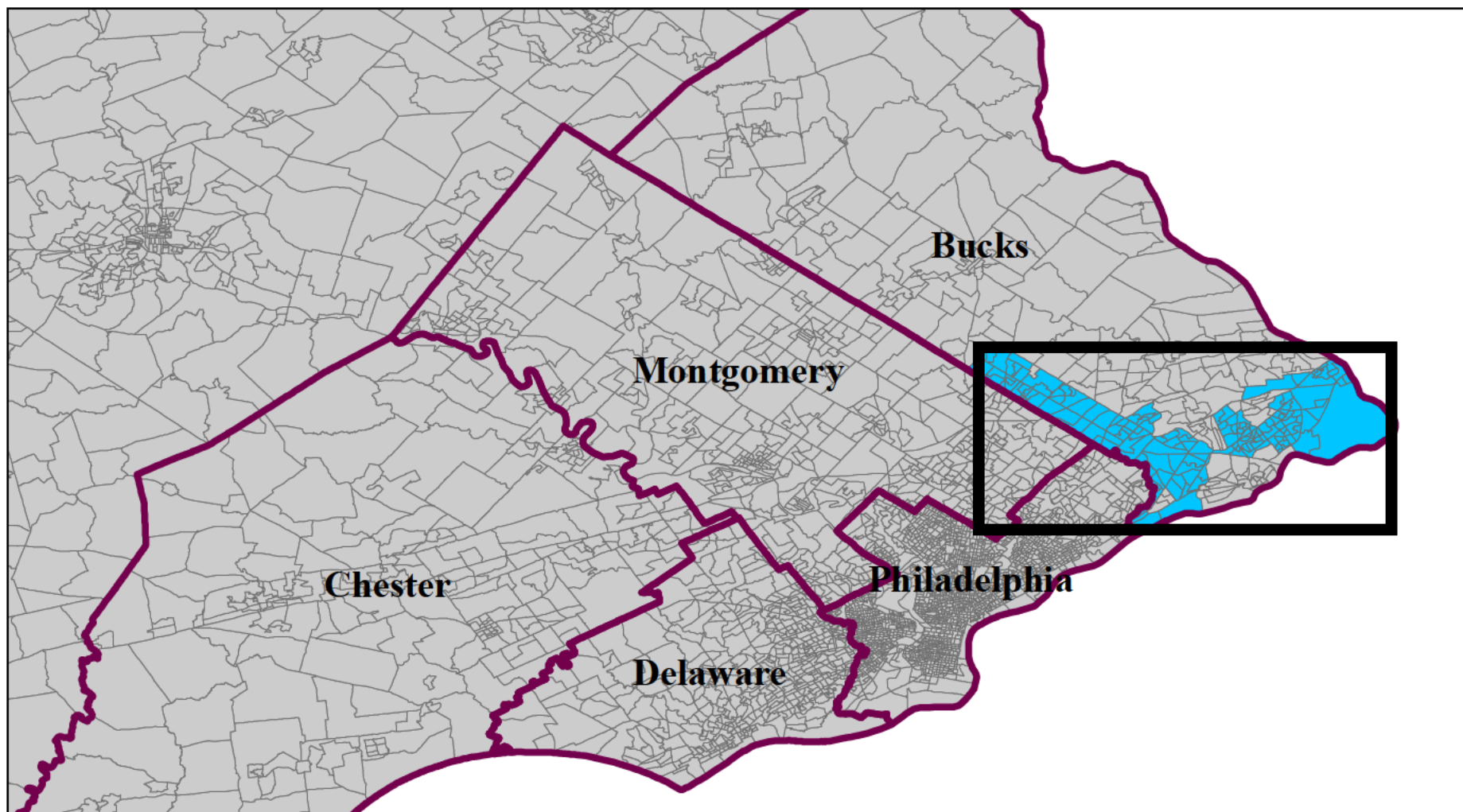
Sources:

[1] ESRI GIS and Mapping Software, available at [http://arcdata.esri.com/data/tiger2000/tiger\\_download.cfm](http://arcdata.esri.com/data/tiger2000/tiger_download.cfm), accessed on January 3, 2014.

[2] ESRI Data & Maps 9.3.



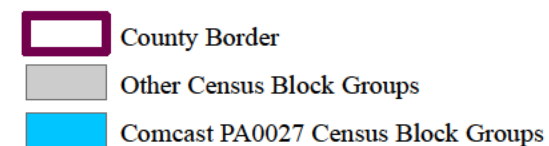
**Exhibit 2A**  
**Census Block Groups that *MediaPrints* Associated with *Factbook*-Defined Comcast Cable System PA0027, in Q1 2008**



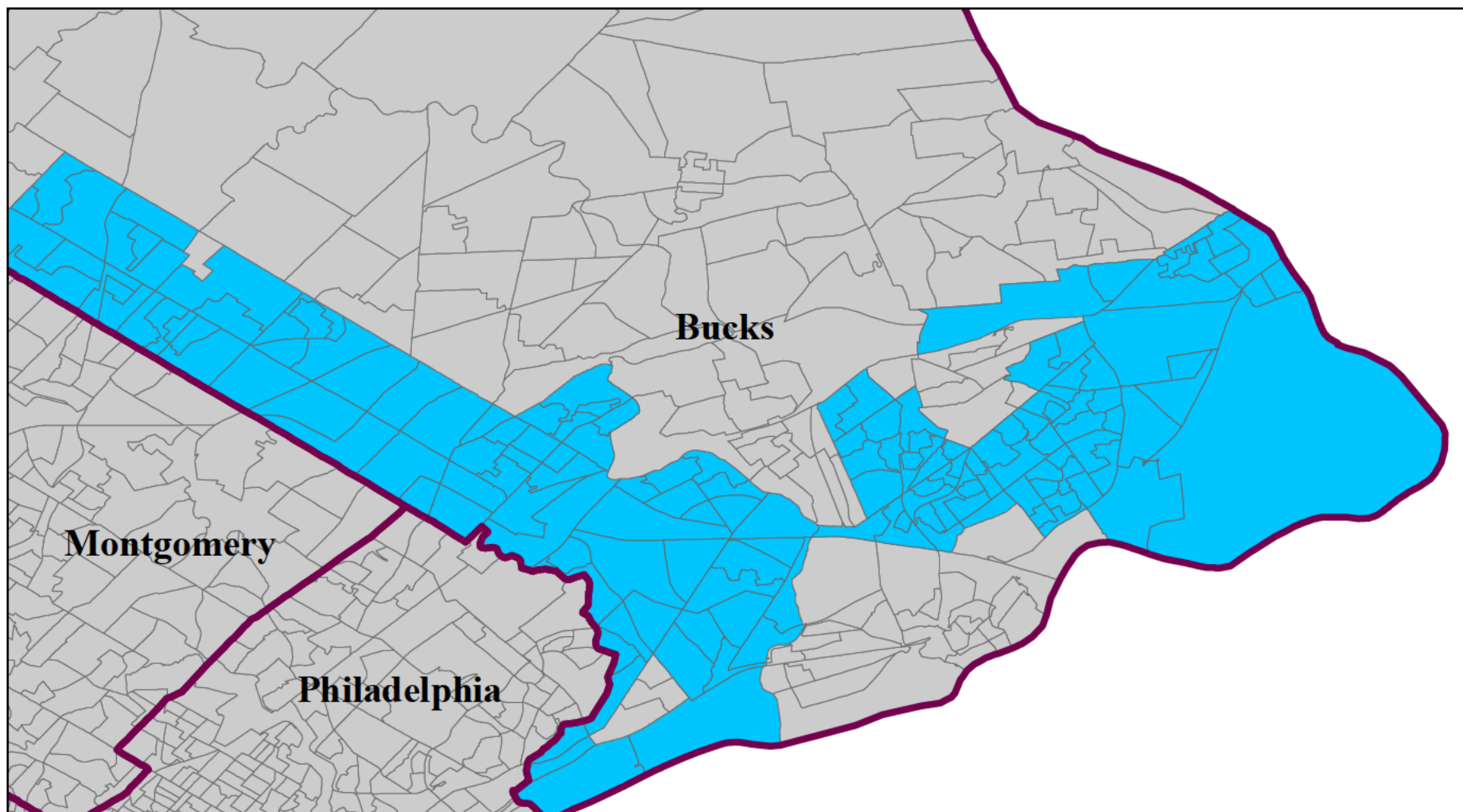
Note: These Census Block Group boundaries correspond to the 2000 Census.

Sources:

- [1] Backup Production to Expert Report of Dr. Michael A. Williams, September 11, 2009.
- [2] ESRI GIS and Mapping Software, available at [http://arcdata.esri.com/data/tiger2000/tiger\\_download.cfm](http://arcdata.esri.com/data/tiger2000/tiger_download.cfm), accessed on January 3, 2014.
- [3] ESRI Data & Maps 9.3.



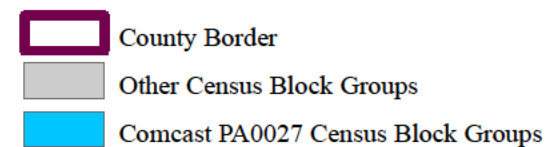
**Exhibit 2B**  
**Census Block Groups that *MediaPrints* Associated with *Factbook*-Defined Comcast Cable System PA0027, in Q1 2008**



Note: These Census Block Group boundaries correspond to the 2000 Census.

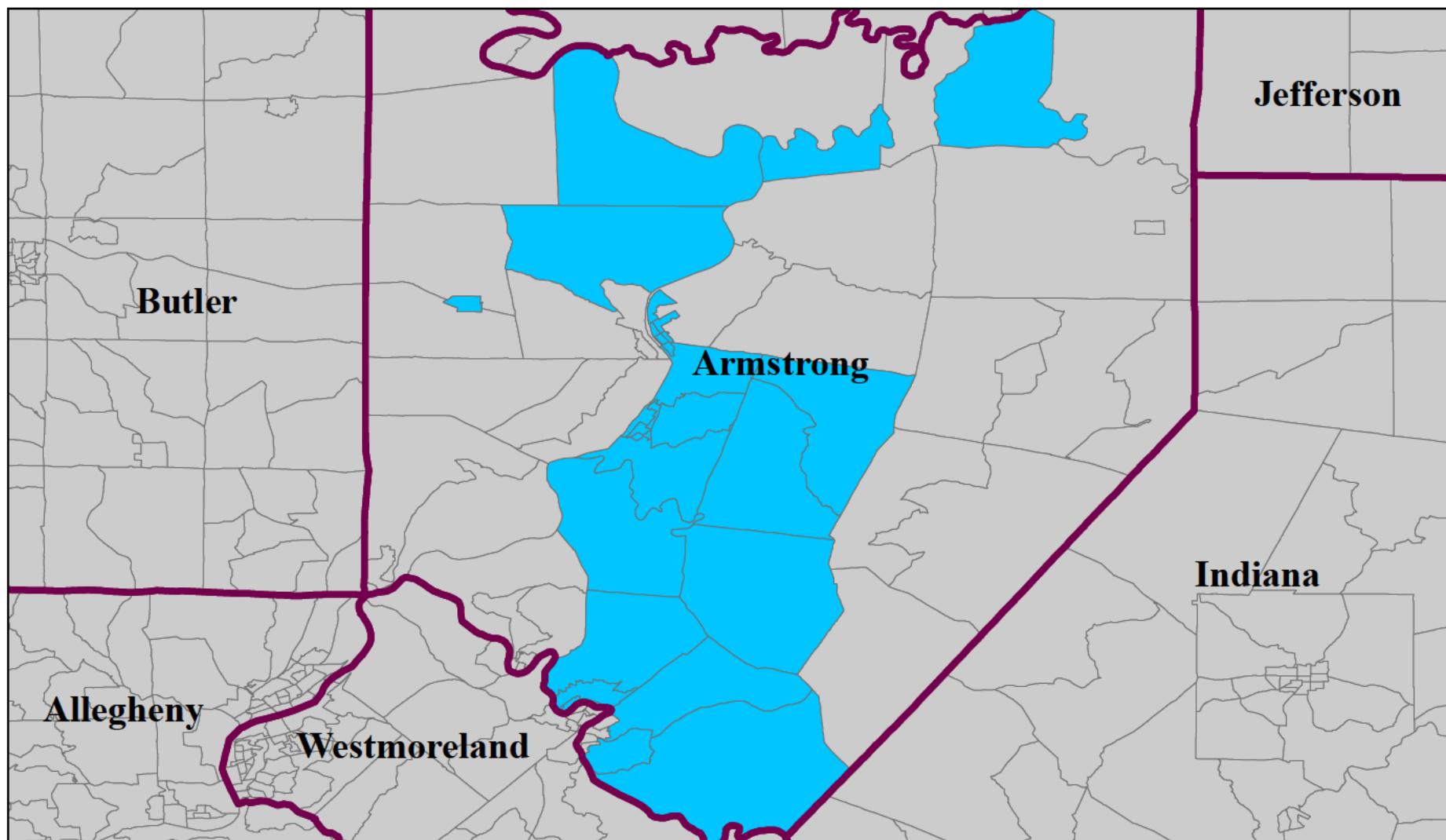
Sources:




- [1] Backup Production to Expert Report of Dr. Michael A. Williams, September 11, 2009.
- [2] ESRI GIS and Mapping Software, available at [http://arcdata.esri.com/data/tiger2000/tiger\\_download.cfm](http://arcdata.esri.com/data/tiger2000/tiger_download.cfm), accessed on January 3, 2014.
- [3] ESRI Data & Maps 9.3.





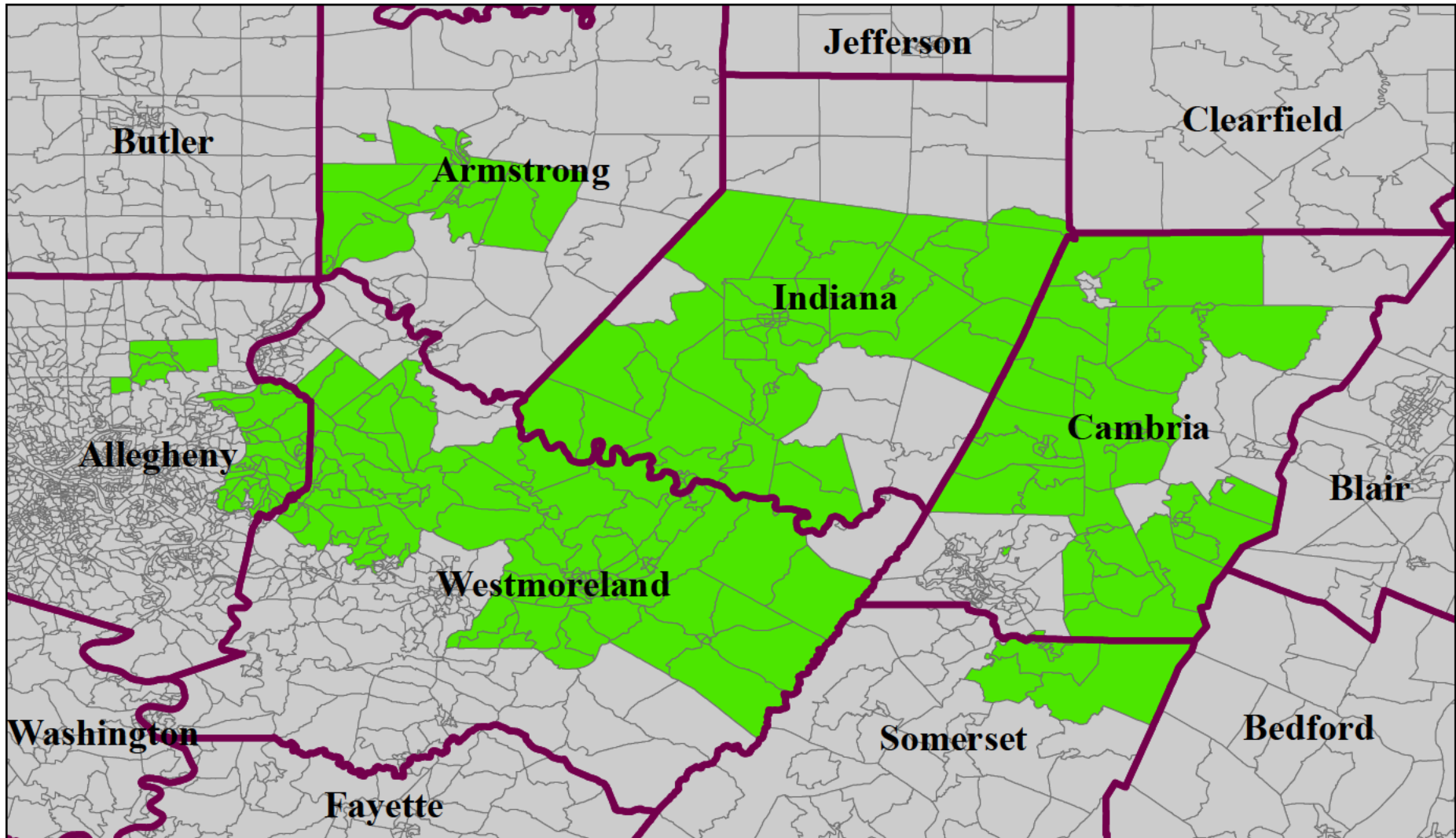
**Exhibit 3A**  
**Census Block Groups that *MediaPrints* Associated with *Factbook*-Defined Comcast Cable System PA0388, Q1 2006**



- Notes:
- [1] Dr. Williams identified *Factbook*-defined Comcast Cable System PA0388 as overbuilt in Q1 2006.
  - [2] According to *MediaPrints*, PA0388 is associated with 28 Census Block Groups.
- Sources:
- [1] Backup Production to Expert Report of Dr. Michael A. Williams, April 10, 2009.
  - [2] ESRI GIS and Mapping Software, available at [http://arcdata.esri.com/data/tiger2000/tiger\\_download.cfm](http://arcdata.esri.com/data/tiger2000/tiger_download.cfm), accessed on January 7, 2014.
  - [3] ESRI Data & Maps 9.3.
- Legend:
-  County Border
  -  Comcast PA0388 Census Block Groups
  -  Other Census Block Groups

**Exhibit 3B**

**Census Block Groups that *MediaPrints* Associated with *Factbook*-Defined Adelphia Cable System PA0320, Q1 2006**






**Notes:**

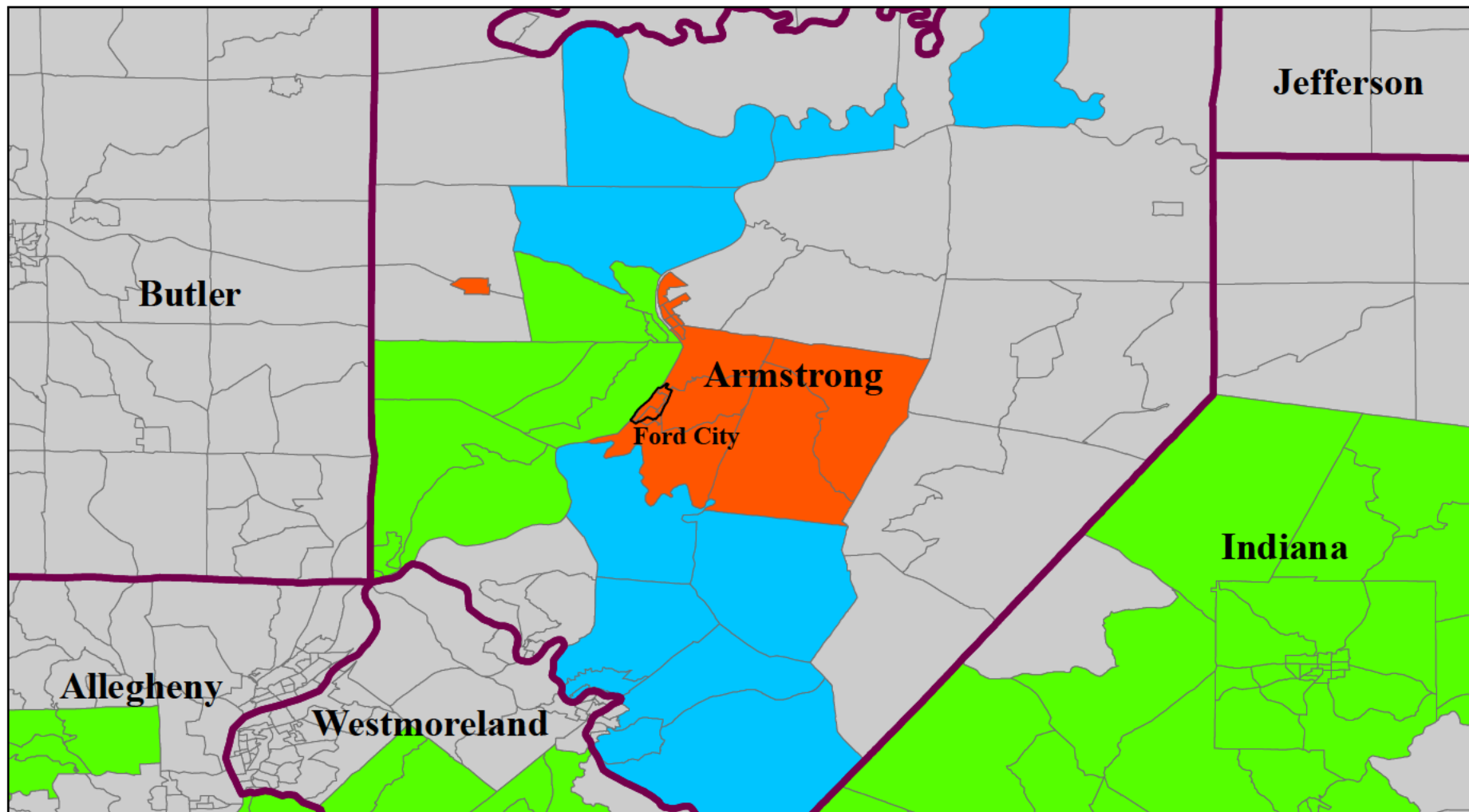
- [1] Dr. Williams identified *Factbook*-defined Adelphia Cable System PA0320 as overbuilding Comcast in Q1 2006.
- [2] According to *MediaPrints*, PA0320 is associated with 279 Census Block Groups.

**Sources:**

- [1] Backup Production to Expert Report of Dr. Michael A. Williams, April 10, 2009.
- [2] ESRI GIS and Mapping Software, available at [http://arcdata.esri.com/data/tiger2000/tiger\\_download.cfm](http://arcdata.esri.com/data/tiger2000/tiger_download.cfm), accessed on January 7, 2014.
- [3] ESRI Data & Maps 9.3.

-  County Border
-  Adelphia PA0320 Census Block Groups
-  Other Census Block Groups

**Exhibit 3C**  
**Census Block Groups that *MediaPrints* Associated with *Factbook*-Defined Comcast Cable System PA0388**  
**and *Factbook*-Defined Adelphia Cable System PA0320**

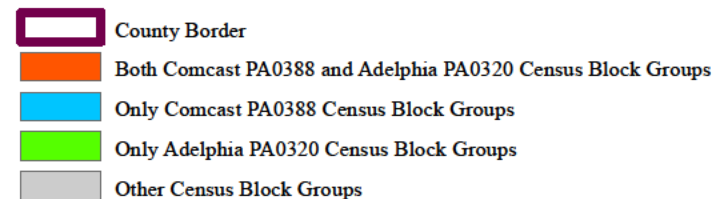


**Notes:**

- [1] Dr. Williams identified *Factbook*-defined Comcast Cable System PA0388 as overbuilt in Q1 2006.
- [2] Based on *MediaPrints*, there are 12 Census Block Groups in the blue-shaded area, 263 Census Block Groups in the green-shaded area, and 16 common Census Block Groups in the orange-shaded area.

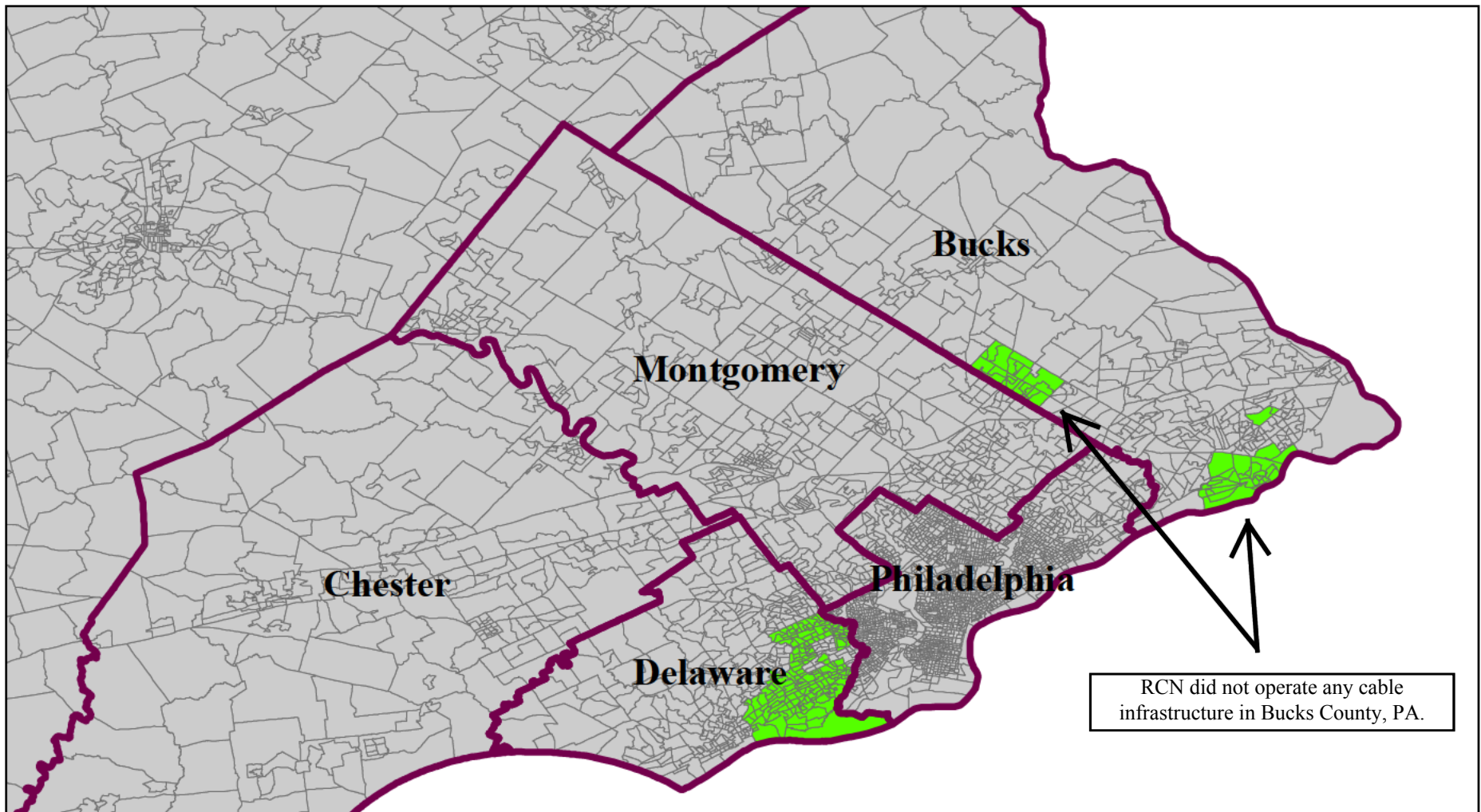
**Sources:**

- [1] Backup Production to Expert Report of Dr. Michael A. Williams, April 10, 2009.
- [2] ESRI GIS and Mapping Software, available at [http://arcdata.esri.com/data/tiger2000/tiger\\_download.cfm](http://arcdata.esri.com/data/tiger2000/tiger_download.cfm), accessed on January 7, 2014.
- [3] ESRI Data & Maps 9.3.





**Exhibit 4**  
**Census Block Groups that *MediaPrints* Associated with *Factbook*-Defined RCN Cable System PA0447, in Q3 2007**



Note: These Census Block Group boundaries correspond to the 2000 Census.

Sources:




[1] Backup Production to Expert Report of Dr. Michael A. Williams, April 10, 2009.

[2] ESRI GIS and Mapping Software, available at [http://arcdata.esri.com/data/tiger2000/tiger\\_download.cfm](http://arcdata.esri.com/data/tiger2000/tiger_download.cfm), accessed on January 3, 2014.

[3] ESRI Data & Maps 9.3.

[4] Defendants' Motion for Summary Judgment, *Caroline Behrend, et al. v. Comcast Corporation, et al.*, No. 03-6604, March 5, 2010, at 54-56.

[5] Deposition of Laura Burke, and Attached Exhibits, April 25, 2008.

-  County Border
-  Other Census Block Groups
-  RCN PA0447 Census Block Groups

## Exhibit 5

*Factbook* / *MediaPrints* -Reported Data for *Factbook* -Defined RCN Cable System PA0447

Quarter <sup>[1]</sup>	<i>Factbook</i> - Reported RCN Subscribers	<i>MediaPrints</i> -Reported Number of Census Block Groups		Dr. Williams' Imputed Number <sup>[2]</sup> of RCN Subscribers	
		Delaware	Bucks	Delaware	Bucks
		County	County	County	County
Q1 2003	-	164	58	-	-
Q2 2003	-	145	49	-	-
Q3 2003	-	187	58	-	-
Q4 2003	-	187	58	-	-
Q1 2004	-	162	49	-	-
Q2 2004	-	162	49	-	-
Q3 2004	-	162	49	-	-
Q4 2004	-	-	-	-	-
Q1 2005	-	187	58	-	-
Q2 2005	-	168	49	-	-
Q3 2005	-	168	49	-	-
Q4 2005	-	168	49	-	-
Q1 2006	-	168	49	-	-
Q2 2006	-	168	49	-	-
Q3 2006	-	176	49	-	-
Q4 2006	-	176	49	-	-
Q1 2007	-	176	49	-	-
Q2 2007	120,000	176	49	93,867	26,133
Q3 2007	120,000	176	49	93,867	26,133
Q4 2007	120,000	176	49	93,867	26,133
Q1 2008	120,000	176	49	93,867	26,133
Q2 2008	120,000	176	49	93,867	26,133
Q3 2008	120,000	176	49	93,867	26,133
Q4 2008	120,000	176	49	93,867	26,133

**Notes:**

[1] Dr. Williams' produced *MediaPrints* data excluded Q4 2004.

[2] Dr. Williams allocated *Factbook*-reported subscribers to Census Block Groups by dividing the total number of subscribers in the *Factbook*-defined cable system by the total number of Census Block Groups that *MediaPrints* associates with that cable system.

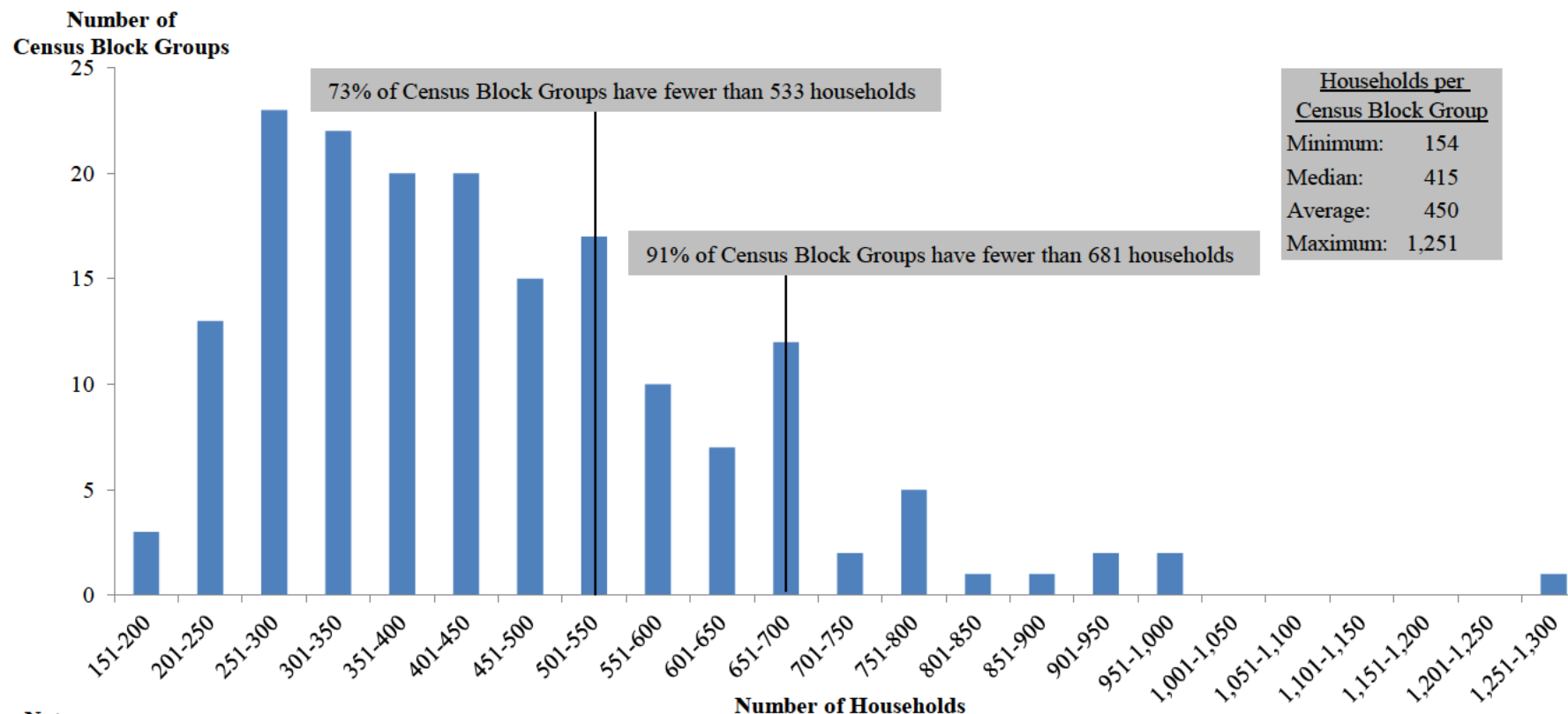
[3] Dash denotes missing data.

**Sources:**

[1] Backup Production to Expert Report of Dr. Michael A. Williams, April 10, 2009.

[2] Backup Production to Expert Report of Dr. Michael A. Williams, September 11, 2009.

**Exhibit 6**  
**Distribution of Households per Census Block Group in Delaware County, Pennsylvania**  
**that *MediaPrints* Associates with *Factbook*-Defined RCN Cable System PA0447, in Q3 2007**



**Notes:**

[1] Data on households per Census Block Group are based on Census 2000 data.

[2] There are 225 Census Block Groups in Delaware County, Pennsylvania and Bucks County, Pennsylvania that *MediaPrints* associates with RCN, in Q3 2007. Of those 225 Census Block Groups, 176 are in Delaware County, and 49 are in Bucks County.

[3] If Dr. Williams were to calculate the number of subscribers per Census Block Group in Delaware and Bucks Counties for PA0447, he would apportion the 120,000 subscribers in PA0447 evenly across 225 Census Block Groups, for an average of 533 subscribers per Census Block Group.

[4] If Dr. Williams were to calculate the number of subscribers per Census Block Group in Delaware County for PA0447, he would apportion the 120,000 subscribers in PA0447 evenly across 176 Census Block Groups, for an average of 681 subscribers per Census Block Group.

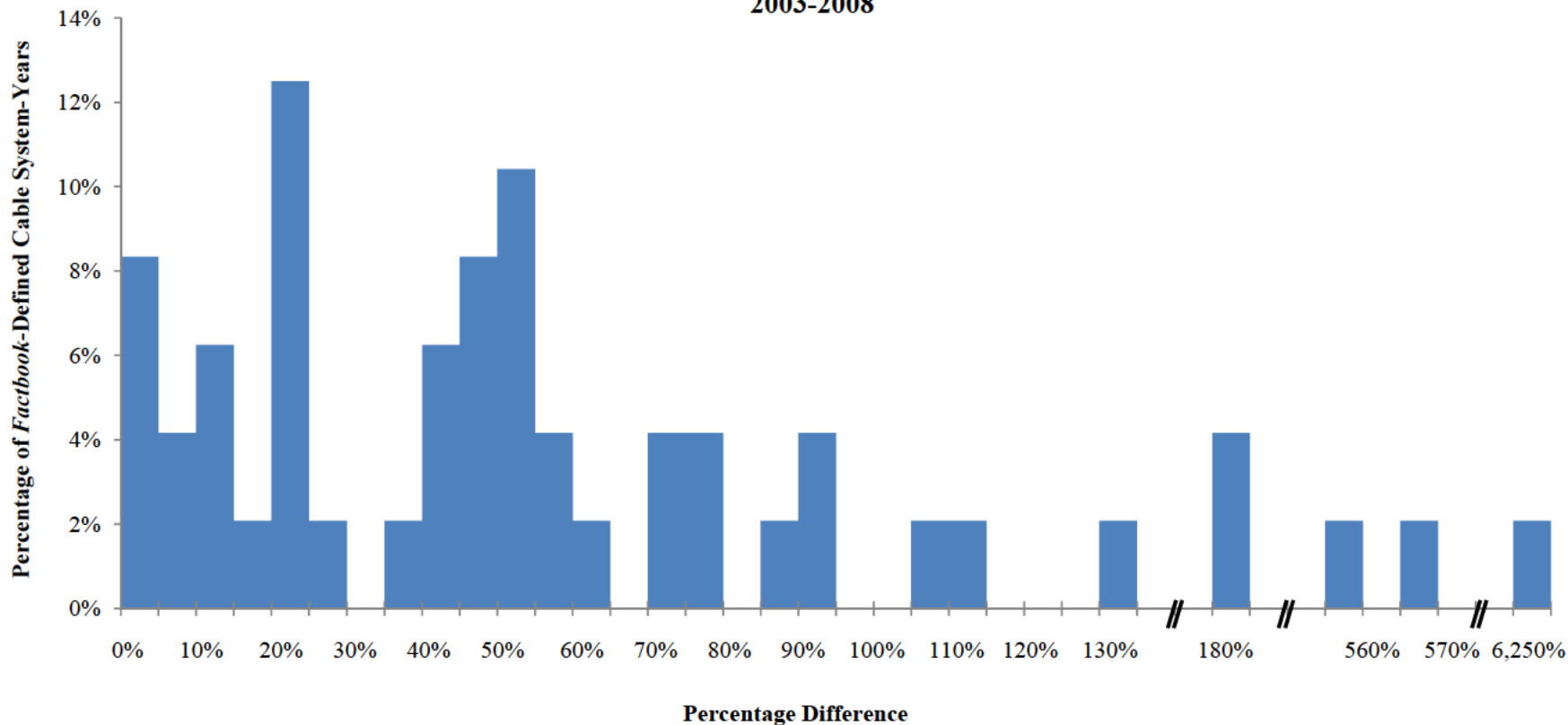
**Sources:**

[1] Backup Production to Expert Report of Dr. Michael A. Williams, April 10, 2009.

[2] Backup Production to Expert Report of Dr. James T. McClave, August 19, 2013.

**Exhibit 7**

**Percentage Difference in *Factbook* Subscribers and Comcast Internal Data for the about 30 Percent of *Factbook*-Defined Cable Systems in which the *Factbook* Subscribers Are Less Than those Calculated Using Comcast's Internal Data 2003-2008**



## Exhibit 8

**Dr. Williams' Algorithm Would Fail to Identify *Factbook* -Defined Comcast Cable System CA0043 as Overbuilt in 2006-2008  
if the Comcast-Reported Subscriber Data Were to Be Used Instead of the *Factbook* -Reported Subscriber Data**

**Charter's Subscriber Share in the CA0043 Footprint,**

Quarter	Comcast Subscribers in:		Using Dr. Williams' Methodology <sup>[1]</sup>	
	[A] <i>Factbook</i> Data	[B] Comcast Data	[C] With <i>Factbook</i> Data in [A]	[D] With Comcast Data in [B] <sup>[2]</sup>
Q3 2003	50,541	47,569	16.0%	16.8%
Q3 2004	50,541	47,656	16.7%	17.5%
Q3 2005	50,541	47,581	16.7%	17.5%
Q3 2006	48,560	99,705	15.2%	8.0%
Q3 2007	48,560	72,317	15.2%	10.7%
Q3 2008	48,560	75,671	15.2%	10.3%

**Notes:**

[1] To calculate subscriber penetration of firms operating within Census Block Groups associated with a cable system, Dr. Williams divides the sum of each firm's allocated subscribers from the Census Block Groups associated with that particular *Factbook* -defined cable system by the total number of subscribers of all allocated subscribers from the Census Block Groups associated with that particular cable system.

[2] Replacing the *Factbook* data here does not correct Dr. Williams' calculation. For example, it still relies upon *Factbook* -reported Charter subscriber data, and it allocates subscribers evenly across the Census Block Groups.

**Sources:**

[1] Backup Production to Expert Report of Dr. Michael A. Williams, April 10, 2009.

[2] Backup Production to Expert Report of Dr. Michael A. Williams, September 11, 2009.

[3] Backup Production to Class Recertification Report of Dr. James T. McClave, August 19, 2013.



**Appendix 1**  
**TASNEEM CHIPTY**  
**Managing Principal**

Office: (617) 425 8122  
Cell: (617) 697 6826  
[tchipty@analysisgroup.com](mailto:tchipty@analysisgroup.com)

111 Huntington Avenue  
Tenth Floor  
Boston, MA 02199

Dr. Chipty is an expert in industrial organization, antitrust economics, and econometrics. She has advised clients on a range of competitive issues and has provided economic and econometric analyses in cases involving antitrust liability, damages, and class certification. She has evaluated competitive effects of mergers and acquisitions and has advised clients in post-merger contestations. She has also provided economic analyses for commercial contract disputes, product liability litigation, and intellectual property disputes. Dr. Chipty has studied numerous industries, including airlines, broadcast and satellite radio, cable and satellite television, healthcare, newspapers, pharmaceuticals, pulp and paper, sports, and tobacco. Dr. Chipty has submitted testimony, testified at trial and at deposition, and given presentations before various organizations and agencies, including the Federal Trade Commission and the Department of Justice. Prior to joining Analysis Group, Dr. Chipty was a Vice President at Charles River Associates. She has served on the faculties of the Ohio State University, Brandeis University, and MIT, where she taught courses in antitrust and regulation, industrial organization, and econometrics. She has also published academic research on the strategic use of vertical integration for market foreclosure, the role of firm size and network effects on bilateral business negotiations, and the effects of regulations on firm behavior.

**EDUCATION**

Ph.D. Economics, Massachusetts Institute of Technology  
B.A. Mathematics and Economics, with honors, Wellesley College

**PROFESSIONAL EXPERIENCE**

2010 – Present Analysis Group, Inc., Boston, MA  
*Managing Principal*

1999 – 2010 Charles River Associates, Inc., Boston, MA  
*Vice President (2005-2010)*  
*Principal (2002-2005)*  
*Senior Associate (1999-2002)*

2005 Massachusetts Institute of Technology, Boston, MA  
*Visiting Associate Professor of Economics*

1997 – 1999 Brandeis University, Graduate School of International Economics and Finance, Waltham, MA  
*Visiting Assistant Professor of Economics*

1995 Osaka University, Osaka, Japan  
*Visiting Foreign Scholar*

1993 – 1999 Ohio State University, Columbus, OH  
*Assistant Professor of Economics*

## TESTIMONY EXPERIENCE

- *American Broadcasting Company Inc., et al. v. Aereo*, 12 Civ. 1543, in United States District Court in the Southern District of New York. Submitted testimony on December 20, 2013 on behalf of Aereo. Attorney: Fish and Richardson (David Hosp).
- *DISH Network LLC. f/k/a Echostar Satellite LLC v. ESPN, Inc., and ESPN Classic, Inc.*, No. 09 CIV 6875 (JGK) (FM), in United States District Court in the Southern District of New York. Submitted testimony on July 29, 2011; testified at deposition on November 22, 2011; testified at deposition in January 2013; testified at trial in February 2013 on behalf of DISH Network. Attorneys: Flemming Zulack Williamson Zauderer LLP (Dean Nyciper) and Simpson Thatcher (Barry Ostrager and Mary Kay Vyskocil).
- *Caroline Behrend et al v. Comcast Corporation et al.*, Civil Action No. 03-6604, in the United States District Court for the Eastern District of Pennsylvania. Submitted testimony on April 10, 2009, on May 6, 2009, on May 11, 2009, on August 21, 2009, on September 18, 2009, and on May 22, 2012; testified at deposition on May 22, 2009; testified at a class recertification hearing on October 26, 2009, on behalf of Comcast Corporation. Attorneys: Kasowitz Benson Torres & Freidman (Michael Shuster and Sheron Korpus) and Davis Polk (David Toscano, Arthur Burke, and Michael Carroll).
- *Echostar Satellite LLC v. ESPN, Inc., ESPN Classic, Inc., ABC Cable Networks Group, Inc., Soapnet L.L.C., and International Family Entertainment Inc.*, Index 08-600282, in the Supreme Court of the State of New York County of New York. Testified at deposition on June 23, 2011, on behalf of Echostar Satellite LLC. Attorneys: Flemming Zulack Williamson Zauderer LLP (Dean Nyciper).
- *Casitas Municipal Water District v. United States*, Case No. 05-168L, in the United States Court of Federal Claims. Submitted testimony on February 25, 2010 and February 8, 2007; testified at deposition on March 10, 2010; testified at trial on October 28, 2010, on behalf of the United States. U.S. Justice Department (James Gette and Barrett Atwood).
- *Royalties To Be Collected By CSI and SOCAN For the Reproduction and the Communication to the Public by Online Music Services, In Canada, of Musical or Dramatico-musical Works, for the years 2007 to 2010, before the Canadian Copyright Board*. Submitted testimony on April 29, 2010 and on June 9, 2010; testified at trial on June 28-9, 2010, on behalf of Apple Inc., Bell Canada Enterprises Inc., Rogers Communications Inc., Telus Communications Company, and Videotron Ltd. Attorneys: Goodmans LLP for Apple Inc. (Michael Koch); and Fasken Martineau DuMoulin, LLP for the rest (Jay Kerr-Wilson).
- *United States of America v. Daily Gazette Company and MediaNews Group, Inc.*, Civil Action No. 2:07-0329, in the United States District Court Southern District of West Virginia. Submitted testimony on September 1, 2009, on behalf of the United States. U.S. Justice Department (John Reed, Mark Merva and Norm Familant).
- *In re. ASARCO LLC, et al.*, Case No. 05-21207, in the United States Bankruptcy Court for the Southern District of Texas, Corpus Christi Division. Submitted testimony on August 1, 2008; testified at deposition on August 7, 2008, on behalf of Ready Mix USA, LLC. Attorneys: Baker, Donelson, Bearman, Caldwell & Berkowitz P.C. (Gary Shockley).
- *SOCAN Tariff No. 16 – Royalties To Be Collected By SOCAN For the Public Performance or the Communication to the Public by Telecommunication, In Canada, of Musical or Dramatico-musical Works, for the years 2007 to 2009, before the Canadian Copyright Board*. Submitted testimony on November 30, 2007; testified at trial in January 2008, on behalf of a consortium of Canadian

background music users, including Bell ExpressVu, Chum Satellite Services, and DMX Canada. Attorneys: Fasken Martineau DuMoulin, LLP (Jay Kerr-Wilson and Aidan O'Neill).

- In the Matter of Digital Performance Right in Sound Recordings and Ephemeral Recordings for a New Subscription Service, CRB Proceeding 2005-5, before the U.S. Copyright Board. Submitted testimony on October 30, 2006 and July 24, 2007; testified at deposition on May 8, 2007; testified at trial in June 2007, on behalf of Sirius Satellite Radio and XM Satellite Radio. Attorneys: Wiley Rein, LLP for Sirius (Bruce Joseph) and Weil, Gotshal & Manges for XM (Ralph Miller).

## **MERGERS AND ACQUISITIONS AND OTHER REGULATORY WORK**

Dr. Chipty has extensive experience evaluating the competitive effects of proposed transactions and has advised clients at various stages of their deals, including strategic advice in identifying targets, assistance with agency review, and analyses for post-merger contestations. She has employed economic and econometric tools to evaluate issues of market definition, critical loss analysis, direct evidence of unilateral effects, and efficiencies. She has studied the likelihood of temporary or permanent foreclosure, as part of a raising rivals cost strategy. In addition, she has assessed regulatory structures and their associated effect on competition. Examples of Dr. Chipty's work in this area include:

- Advisor to the Massachusetts Health Policy Commission in undertaking cost and market impact reviews of proposed health care mergers in Massachusetts, 2013. HPC (Karen Tseng and Kate Scarborough).
- Assisted Saint Alphonsus Medical Center to evaluate the competitive effects of St. Luke's Health System's acquisition of Saltzer Medical Group in Nampa, Idaho, 2012-2013. Attorney: Honigman, Miller, Schwartz and Cohn (David Ettinger).
- Assisted Arris Group in its acquisition of Motorola Home business unit from Google, before the Department of Justice, 2013. Attorneys: Hogan Lovells (Logan Breed) and Troutman Sanders (Daniel Anziska).
- Coauthored a white paper, on behalf of Televisa, evaluating the competitive impact in the mobile telephone marketplace of Televisa's proposed acquisition of 50% of GSF Telecom Holdings, S.A.P.I. de C.V., which owns 100% of Grupo Iusacell, S.A. de C.V. Submitted to Mexico's competition authority, Federal Commission of Economic Competition, 2012 (joint with Almudena Arcelus and David Sosa).
- Conducted analyses and presented before staff of the FTC, in an investigation of two joint venture partners involving allegations of potentially anticompetitive conduct, 2011-2012. Attorneys: Baker Botts (Thomas Dillickrath and William Henry).
- Authored a white paper analyzing the likely effects of Steward Healthcare's acquisition of Morton Hospital in the greater Boston area, submitted to the State Attorney General's office, June 14, 2011. Attorneys: Edwards Angell Palmer & Dodge (Patricia Sullivan).
- Evaluated the likely effects of the Southwest Airlines-Airtran merger, on behalf of the United States, Winter 2011. U.S. Justice Department (Michael Billiel and Oliver Richard).
- Coauthored a white paper, on behalf of Time Warner Cable, analyzing brinkmanship tactics and broadcast retransmission consent rules established by the 1992 Cable Act, submitted to the Federal Communications Commission (joint with Prof. Steven Salop, Dr. Martino DeStefano, Dr. Serge Moresi, and Dr. John Woodbury), June 3, 2010.
- Authored Federal Communication Commission Media Study #5, on behalf of the Commission, as part of its periodic review of the media ownership rules, analyzing the effects of ownership structure in broadcast radio, on program variety and advertiser and listener welfare, released June 2007.

- Coauthored a white paper analyzing bidding behavior and the potential competitive effects of the merger of Alcatel and Lucent, submitted to the Department of Justice (joint with Drs. Andrew Dick and Stanley Besen), April 28, 2006. Attorneys: Skadden, Arps, Slate Meagher & Flom LLP (James Keyte and Neal Stoll).
- Conducted and presented analysis before the Federal Trade Commission on behalf of Barr Pharmaceuticals regarding its acquisition of a hormone contraceptive product (joint with Prof. Steven Salop), Fall 2005. Attorneys: Kirkland & Ellis LLP (Mark Kovner).
- Conducted an analysis of efficiencies on behalf of Time Warner and Comcast, in their joint bid for Adelphia Communications (joint with Dr. Stanley Besen). Attorneys: Paul Weiss Rifkind Wharton & Garrison, LLP (Joseph Simons).
- Assisted NorthShore University HealthSystem (formerly Evanston Northwestern Health Corporation) with the Federal Trade Commission's post-merger investigation of the 2000 merger of Evanston Hospital and Highland Park Hospital. Attorneys: Winston & Strawn LLP (Michael Sibarium).

### **OTHER CONSULTING EXPERIENCE, BY TOPICAL AREA**

Dr. Chipty has also provided consultation to litigation clients on matters some of which eventually settled, and she has provided business guidance to clients for strategic planning. Examples of Dr. Chipty's work in this area include:

#### **Pharmaceutical and Health Care**

- Advised the working groups of the Advanced Market Commitment ("AMC"), an initiative of the Gates Foundation to pilot the first AMC for the pneumococcus vaccine. The goal of this AMC is to provide appropriate market-based incentives to induce capacity investments by the major pharmaceutical companies for manufacturing sufficient vaccines for low-income countries.
- Assisted a pharmaceutical manufacturer against Medicaid reimbursement, fraud, and unfair trade practices claims brought by numerous State Attorneys General. Attorneys: O'Melveny & Meyers LLP (Steve Brody and Brian Anderson) and Baker Botts LLP (Richard Josephson).
- Advised Regional Urology, in *Willis-Knighton Health System and Health Plus of Louisiana, Inc. v. Regional Urology LLC, et al.*, Civil No. CV02-1094-S. Attorneys: Breazeale Sachse & Wilson, LLP (Claude Reynaud).

#### **Media and Sports**

- Assisted the YES Television Network in evaluating the value to the network of carriage rights for certain New Jersey Nets games, for contract renegotiation and possible arbitration. Attorneys: Boies Schiller & Flexner, LLP (Robert Dwyer).
- Assisted the Monte Carlo Tennis Tournament, in a dispute with the ATP Tour, alleging abuse of market power. Attorneys: Sidley Austin LLP (Alan Unger).
- Assisted a team of the National Football League, in a dispute with a cable operator, alleging vertical foreclosure. Attorneys: Boies Schiller & Flexner, LLP (Robert Dwyer).
- Assisted Major League Baseball in *Major League Baseball Properties, Inc. v. Salvino*, involving a challenge to the league's use of centralized trademark licensing. Attorneys: Foley & Lardner LLP (Jim Mckeown).
- Advised HBO on reasonable fees for music performance rights in their negotiation with BMI. Attorney: Cravath, Swaine & Moore LLP (Kenneth Lee).

- Advised XM Satellite Radio on reasonable fees for music performance rights for business negotiations. Attorneys: Shaw Pittman LLP (Cynthia Greer).

### **Tobacco**

- Assisted Appalachian Oil Company, in *R.J. Reynolds Tobacco Company v. Market Basket Food Stores, Inc., et al.*, Civil Action No. 5:05-CV-253. Attorneys: Baker, Donelson, Bearman, Caldwell & Berkowitz P.C. (Gary Shockley).
- Assisted the Department of Justice, in *United States v. Philip Morris et al.*, Civil Action No. 99-2486, a RICO case against the major tobacco manufacturers and associations involving allegations of conspiracy to suppress information and to suppress innovation. Attorneys: Department of Justice (Steve Brody, Renee Brooker, and James Gette).
- Assisted Star Scientific, in *Star Scientific, Inc. v. R.J. Reynolds Tobacco Company*, Case No. AW 01-CV-1504 and AW 02-CV-2504. Attorneys: Crowell and Moring (Richard MacMillan and Kathryn Kirmayer).

### **ECONOMETRICS AND STATISTICS**

Dr. Chipty is an expert in the area of statistics and econometrics and has been successful at using econometric arguments both to construct affirmative arguments in litigation as well as to evaluate the use of econometrics by opposing experts. Many of the projects described above used econometric analysis. Other examples of Dr. Chipty's work in this area are described below:

- Submitted a white paper to the European Commission, DG Competition Bureau, on behalf of the European Liner Affairs Association, analyzing the impact of shipping conferences on carriers' ability to collude on prices (joint with Professor Fiona Scott Morton and Mr. Nils Von Hinten-Reed).
- Developed analyses and drafted a report on behalf of defendants in the *In Re: Monosodium Glutamate Litigation* in support of a defendants' motion to dismiss plaintiff's expert testimony based upon improper use of econometrics. Attorneys: Dorsey & Whitney LLP (Michael Lindsay) and Haynes & Boone LLP (Ronald Breaux).
- Used advanced statistical techniques along with a large volume of administrative data, on behalf of United Parcel Service, to evaluate the Postal Service's expert testimony on variable costs. Attorneys: Piper & Marbury LLP (John McKeever).
- Evaluated and criticized the econometric testimony of a defendants' expert, on behalf of a generic pharmaceuticals firm alleging vertical foreclosure and unlawful delay of entry. Attorneys: Solomon Zauderer (Colin Underwood).

### **TRISTATE RESEARCH PARTNERSHIP**

Dr. Chipty was a member of the research team from 1997-1999 in this Department of Health and Human Resources funded collaboration that included the states of Massachusetts, Alabama, and Florida. Dr. Chipty worked with state governments to design research experiments, develop econometric models, and process large administrative databases, in an effort to understand the structure, administration, and impact of minimum standards regulations.

- "The Black-White Wage Gap in the Deep South: Location, Location, Location?" (with Ann Dryden Witte), Working Paper 98-03, Tri-State Child Care Research Partnership, Miami, FL.

- “Employment Patterns of Workers Receiving Subsidized Child Care: A Study of Eight Counties in Alabama,” (with Ann Dryden Witte), available from Margie Curry, Executive Director, Childcare Resources, 1904 First Ave. North, Birmingham, AL 35203-4006.
- “Parents Receiving Subsidized Child Care: A Study of Alabama’s Labor Force,” (with Ann Dryden Witte), Working Paper 98-01, Tri-State Child Care Research Partnership, Miami, FL.
- “Employment of Parents Receiving Subsidized Child Care in Dade County, Florida,” (with Harriet Griesinger and Ann Dryden Witte), Working Paper 98-03, Department of Economics, Wellesley College, Wellesley MA 02481.

## SELECTED PAPERS AND PRESENTATIONS

### Published Articles

“Competitor Collaborations in Health Care: Understanding the Proposed ACO Antitrust Review Process,” *CPI Antitrust Chronicle*, May 2011 (1).

“Vertical Integration, Market Foreclosure, and Consumer Welfare in the Cable Television Industry,” *American Economic Review*, Vol. 91, No. 3, June 2001, pp. 428-453.

“The Role of Buyer Size in Bilateral Bargaining: A Study of the Cable Television Industry” (with Christopher Snyder), *Review of Economics and Statistics*, Vol. 81, No. 2, May 1999, pp. 326-340.

“Economic Effects of Quality Regulations in the Daycare Industry,” *American Economic Review*, Vol. 85, No. 2, May 1995, pp. 419-424.

“Horizontal Integration for Bargaining Power: Evidence from the Cable Television Industry,” *Journal of Economics and Management Strategy*, Vol. 4, No. 2, Summer 1995, pp. 375-397.

“A Marginal Cost Transfer Pricing Methodology,” *Tax Notes*, Nov. 26, 1990 (with Ann Dryden Witte, Wellesley College and NBER).

### Book Reviews

*The Antitrust Source*, October 2007, Book Review of Michael D. Whinston, *Lectures on Antitrust Economics* (Cambridge, MIT Press, 2006).

*The Journal of Economic Literature*, June 1992, Vol. XXX, No. 2, Book Review of Frank Cowell, *Cheating the Government* (with Ann Dryden Witte, Wellesley College and NBER) (Cambridge, MIT Press, 1990).

### Working Papers

“Efficient Estimation Via Moment Restrictions,” (with Whitney K. Newey).

“Antidumping and Countervailing Orders: A Study of the Market for Corrosion-Resistant Steel,” (with Brian L. Palmer).

“Strategies of Auctioneers and the Value of Time in Outcry Auctions,” (with Lucia Dunn and Stephen Cosslett).

“Firms’ Responses to Minimum Standards Regulations: An Empirical Investigation” (with Ann Dryden Witte), NBER Working Paper # 6104.



“Effects of Information Provision in a Vertically Differentiated Market,” (with Ann Dryden Witte), NBER Working Paper # 6493.

“Unintended Consequences? Welfare Reform and the Working Poor,” (with Ann Dryden Witte, Magaly Queralt, and Harriet Griesinger), NBER Working Paper # 6798.

### **Invited Presentations**

Insights Summit on Telecommunications; Canadian Economics Association Conference; National Bureau of Economics Research; Federal Trade Commission; Department of Justice; Rutgers University; Harvard University; MIT; UCLA; University of Florida; University of Michigan; University of Tennessee; Wellesley College; University of Michigan’s Conference on Telecommunications; Telecommunications Research Policy Conference; American Enterprise Institute’s Conference on Telecommunications Policy; George Mason University’s Conference on Antitrust Issues in the Global Marketplace; American Antitrust Institute’s Annual Conference; Insight Conference on Copyright in Canada.

### **PROFESSIONAL SERVICE**

#### **Service to the American Bar Association**

Co-editor of the 3<sup>rd</sup> edition of *Proving Antitrust Damages*, 2013- Present.

Advisory board of the Pricing Conduct Committee, 2011-2012.

Editorial comments on a chapter of the ABA’s *Price Discrimination Handbook*, 2011.

Plaintiffs’ expert at the ABA Mock Trial involving the issue of resale price maintenance, 2008.

Editorial comments on a chapter of the ABA’s book on *Market Definition*, 2008.

Contribution to the ABA’s *Econometrics Legal, Practical, and Technical Issues*, 2005.

### **MEMBERSHIPS**

American Bar Association

American Economic Association

Wellesley College Business Leadership Council

### **HONORS**

National Science Foundation Fellowship, 1989-1992

Phi Beta Kappa, 1988

## **Appendix 2**

### **Additional Documents Relied Upon**

#### **Legal Documents**

Class Plaintiffs' Memorandum in Support Motion for Certification of Revised Philadelphia Class, *Caroline Behrend, et al., v. Comcast Corporation, et al.*, No. 03-6604, United States District Court, Eastern District of Pennsylvania, August 19, 2013.

Defendants' Motion for Summary Judgment, *Caroline Behrend, et al., v. Comcast Corporation, et al.*, No. 03-6604, United States District Court, Eastern District of Pennsylvania, March 5, 2010.

Plaintiffs' Motion for Class Certification of Revised Philadelphia Class, *Caroline Behrend, et al., v. Comcast Corporation, et al.*, No. 03-6604, United States District Court, Eastern District of Pennsylvania, August 19, 2013.

Third Amended Class Action Complaint for Violations of the Sherman Antitrust Act, *Caroline Behrend, et al., v. Comcast Corporation, et al.*, No. 03-6604, United States District Court, Eastern District of Pennsylvania, May 23, 2006.

*Warren Pub., Inc., v. Microdos Data Corp.*, 115 F.3d 1509, 1517 (11<sup>th</sup> Cir. 1997).

#### **Expert Reports**

Expert Declaration of Dr. Michael A. Williams, and Supporting Materials, *Caroline Behrend, et al., v. Comcast Corporation, et al.*, No. 03-6604, United States District Court, Eastern District of Pennsylvania, April 10, 2009.

Report of Dr. Tasneem Chipty, and Supporting Materials, *Caroline Behrend, et al., v. Comcast Corporation, et al.*, No. 03-6604, United States District Court, Eastern District of Pennsylvania, April 10, 2009.

Corrected Expert Declaration of Dr. James T. McClave, and Supporting Materials, *Caroline Behrend, et al., v. Comcast Corporation, et al.*, No. 03-6604, United States District Court, Eastern District of Pennsylvania, May 4, 2009.

Declaration of Dr. Tasneem Chipty in Reply to Plaintiffs' Amended Motion to Certify the Philadelphia Cluster Class, and Supporting Materials, *Caroline Behrend, et al., v. Comcast Corporation, et al.*, No. 03-6604, United States District Court, Eastern District of Pennsylvania, May 6, 2009.

Expert Rebuttal Declaration of Dr. James T. McClave, and Supporting Materials, *Caroline Behrend, et al., v. Comcast Corporation, et al.*, No. 03-6604, United States District Court, Eastern District of Pennsylvania, May 11, 2009.



Rebuttal Report of Dr. Tasneem Chipty, and Supporting Materials, *Caroline Behrend, et al., v. Comcast Corporation, et al.*, No. 03-6604, United States District Court, Eastern District of Pennsylvania, May 11, 2009.

Corrected Rebuttal Report of Dr. Tasneem Chipty, and Supporting Materials, *Caroline Behrend, et al., v. Comcast Corporation, et al.*, No. 03-6604, United States District Court, Eastern District of Pennsylvania, June 6, 2012.

Supplemental Expert Declaration of Dr. Michael A. Williams, and Supporting Materials, *Caroline Behrend, et al., v. Comcast Corporation, et al.*, No. 03-6604, United States District Court, Eastern District of Pennsylvania, September 11, 2009.

Declaration of Dr. Tasneem Chipty in Connection with Documents Produced by DirectTV, and Supporting Materials, *Caroline Behrend, et al., v. Comcast Corporation, et al.*, No. 03-6604, United States District Court, Eastern District of Pennsylvania, September 18, 2009.

Class Recertification Report of Dr. James T. McClave, and Supporting Materials, *Caroline Behrend, et al., v. Comcast Corporation, et al.*, No. 03-6604, United States District Court, Eastern District of Pennsylvania, August 19, 2013.

Second Supplemental Report of Dr. Michael A. Williams, and Supporting Materials, *Caroline Behrend, et al., v. Comcast Corporation, et al.*, No. 03-6604, United States District Court, Eastern District of Pennsylvania, August 19, 2013.

Supplemental Declaration of Dr. Tasneem Chipty, and Supporting Materials, *Caroline Behrend, et al., v. Comcast Corporation, et al.*, No. 03-6604, United States District Court, Eastern District of Pennsylvania, August 21, 2009.

## **Depositions**

Deposition of Laura Burke, and Attached Exhibits, April 25, 2008.

## **Public Documents**

“2010 Geographic Terms and Concepts - Block Groups - Geography - U.S. Census Bureau,” *United States Census Bureau*, available at [http://www.census.gov/geo/reference/gtc/gtc\\_bg.html](http://www.census.gov/geo/reference/gtc/gtc_bg.html), accessed on January 8, 2014.

“American FactFinder – Table DP02, Selected Social Characteristics in the United States: 2007, 2007 American Community Survey 1-Year Estimates,” *United States Census Bureau*, available at [http://factfinder2.census.gov/faces/tableservices/jsf/pages/productview.xhtml?pid=ACS\\_07\\_1\\_YR\\_DP2&prodType=table](http://factfinder2.census.gov/faces/tableservices/jsf/pages/productview.xhtml?pid=ACS_07_1_YR_DP2&prodType=table), accessed on January 13, 2014.

“AT&T Introduces U-verse in Stamford Area,” *AT&T*, December 27, 2006, available at <http://www.att.com/gen/press-room?pid=4800&cdvn=news&newsarticleid=23283>, accessed on January 10, 2014.

“AT&T Introduces U-verse in San Jose Area,” *AT&T*, December 21, 2006, available at <http://www.att.com/gen/press-room?pid=4800&cdvn=news&newsarticleid=23275>, accessed on January 13, 2014.

“AT&T U-verse Timeline,” *AT&T*, 2008, available at <http://www.att.com/Common/merger/files/pdf/U-verse%20Timeline41907.pdf>, accessed on January 8, 2014.

FCC’s Opinion and Memorandum, *In the Matter of Applications for Consent to the Assignment and/or Transfer of Control of Licenses Adelphia Communications Corporation, (and subsidiaries, debtors-in-possession), Assignors, to Time Warner Cable Inc. (subsidiaries), Assignees; Adelphia Communications Corporation, (and subsidiaries, debtors-in-possession), Assignors and Transferors, to Comcast Corporation (subsidiaries), Assignees and Transferees; Comcast Corporation, Transferor, to Time Warner Inc., Transferee; Time Warner Inc., Transferor, to Comcast Corporation, Transferee*, July 21, 2006, FCC-06-105A1, ¶ 80, available at [http://hraunfoss.fcc.gov/edocs\\_public/attachmatch/FCC-06-105A1.pdf](http://hraunfoss.fcc.gov/edocs_public/attachmatch/FCC-06-105A1.pdf).

“Home Page,” *MediaPrints*, available at <http://www.mediaprints.com/index.htm>, accessed on January 8, 2014.

“Order the Television and Cable Factbook,” *Warren Communications News*, available at <http://www.warren-news.com/fborder.htm>, accessed on January 8, 2014.

“Portions of North Port, Florida, Join Growing FiOS Triple-Play Availability in Sarasota County,” *Verizon*, October 10, 2007, available at <http://newscenter2.verizon.com/press-releases/verizon/2007/portions-of-north-port.html>, accessed on January 9, 2014.

Twelfth Annual Report, *In the Matter of Annual Assessment of the Status of Competition in the Market for the Delivery of Video Programming*, March 3, 2006, FCC-06-11, ¶ 89.

“Verizon Expands FiOS TV Availability in Prince George’s County, Md.,” *Verizon*, May 15, 2007, available at <http://newscenter2.verizon.com/press-releases/verizon/2007/verizon-expands-fios-tv-6.html>, accessed on January 13, 2014.

“Verizon Introduces Fiber Optic TV Service,” *The New York Times*, September 23, 2005, available at [http://www.nytimes.com/2005/09/23/technology/23verizon.html?\\_r=3&pagewanted=print&](http://www.nytimes.com/2005/09/23/technology/23verizon.html?_r=3&pagewanted=print&), accessed on January 8, 2014.

### **Data and Associated Materials**

#85491783v1 - (2014.01.14.Franchises.Backup).pdf.

Amdocs and CSG data.

Comcast's Response to FCC Request II A 10, COM-PA1972624.

ESRI GIS and Mapping Software, available at  
[http://arcdata.esri.com/data/tiger2000/tiger\\_download.cfm](http://arcdata.esri.com/data/tiger2000/tiger_download.cfm), downloaded on January 3, 2014.

ESRI Data & Maps 9.3.

"Exchange Agreement Dated as of April 20, 2005 By and Among Comcast Corporation, Time Warner Cable Inc., Time Warner NY Cable LLC, and The Other Parties Named Herein," COM-DPW0108317-503, at 322-323, 475.

*Factbook* 2004, 2006, 2008.

*Factbook* 2009, Print Edition.

### **Correspondence**

Email Correspondence between Analysis Group and John Hennessy, Director of Analytics and GIS, Budco, December 2-10, 2013.